MYSORE

DASARA EXHIBITION

OFFICIAL HANDBOOK AND GUIDE

1940

BANGALORE:
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1940

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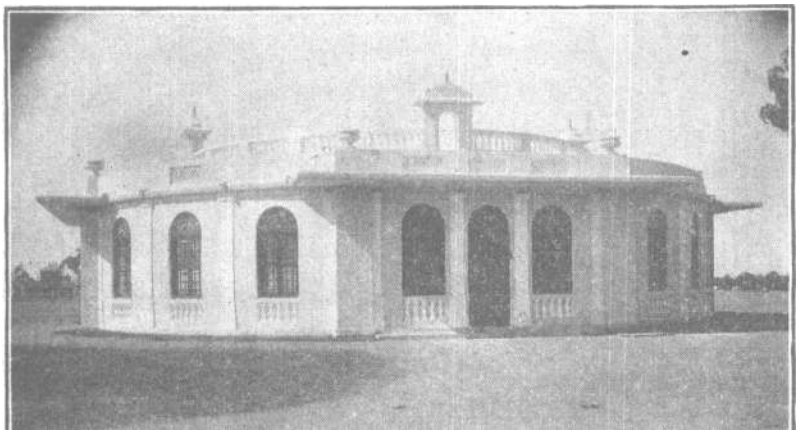
166, Sampige Road, Malleswaram, BANGALORE.



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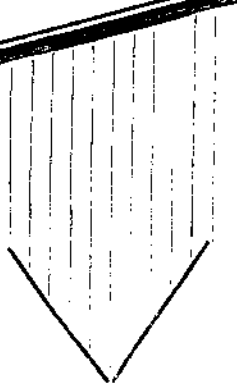

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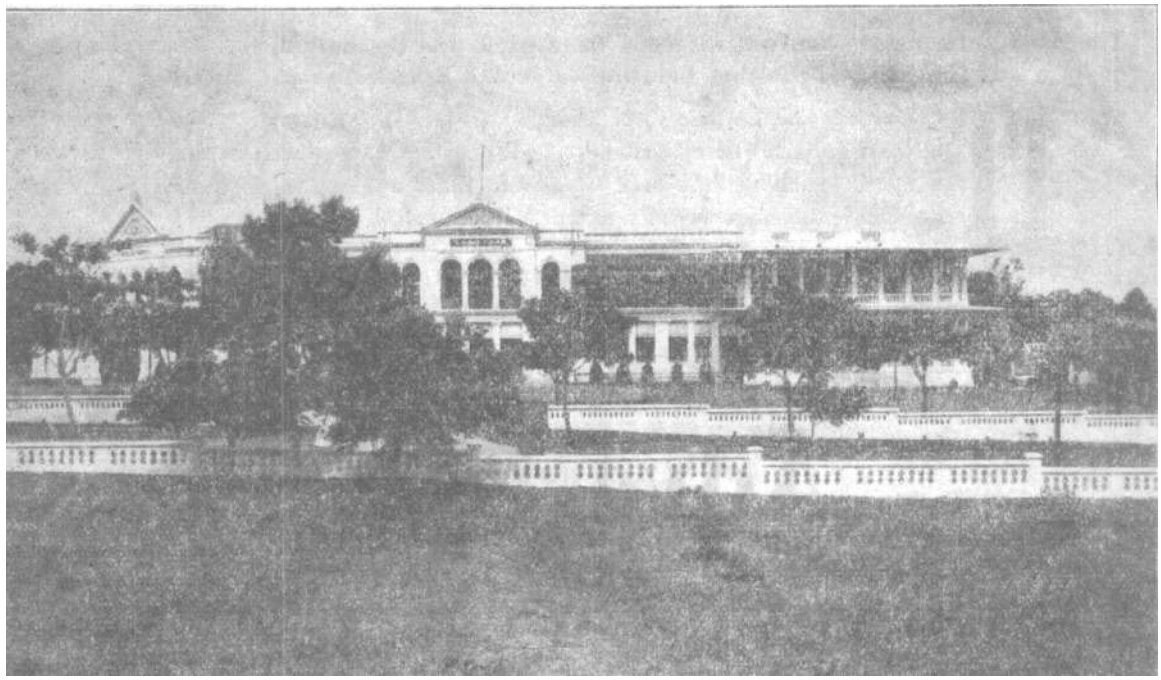

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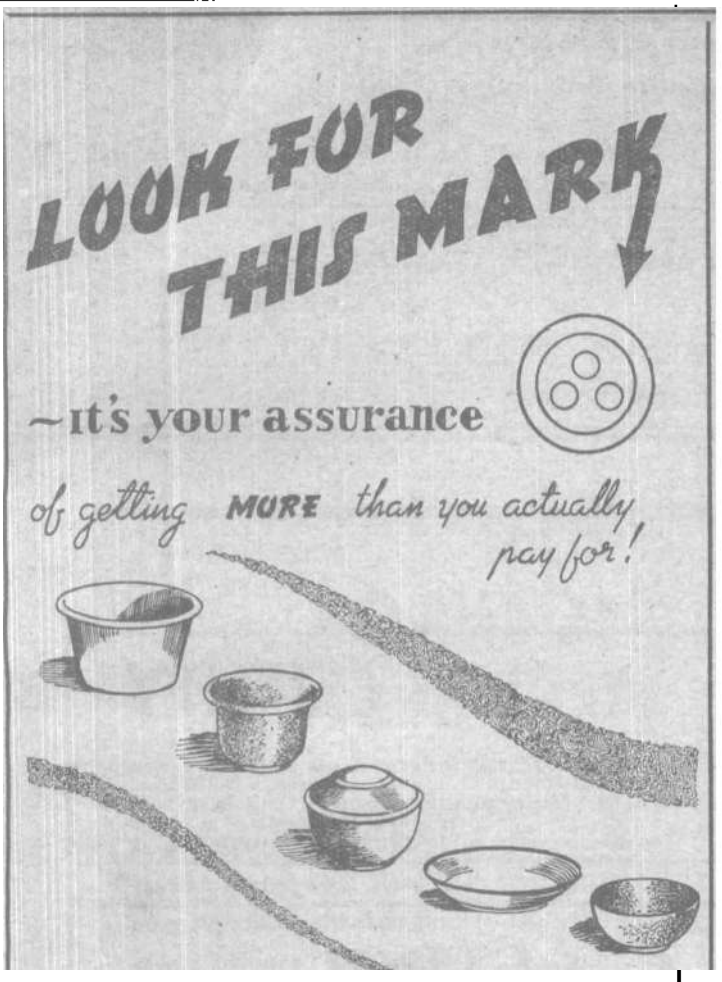

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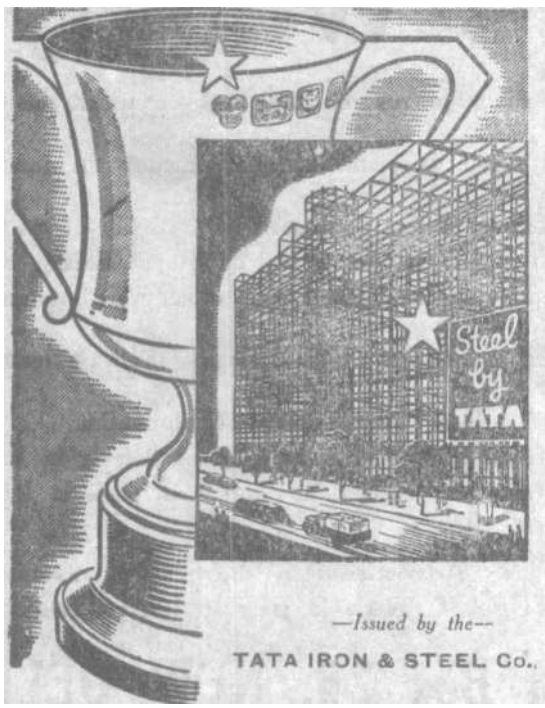

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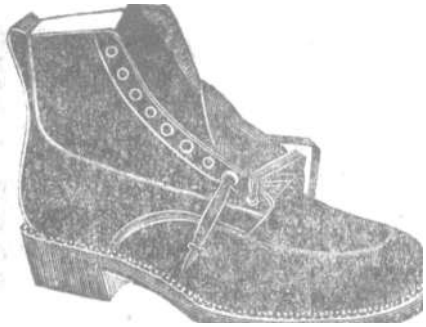

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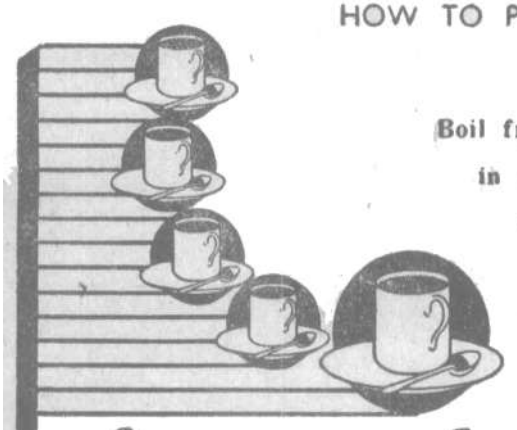
What is the CHEAPEST BEVERAGE

Barring water, tea of course. Even the poorest can afford to enjoy a cup of tea many times a day. A packet of dry tea costing only one pice, will give you five cups of good liquid tea. Remember the best Indian tea is the cheapest in the long run.

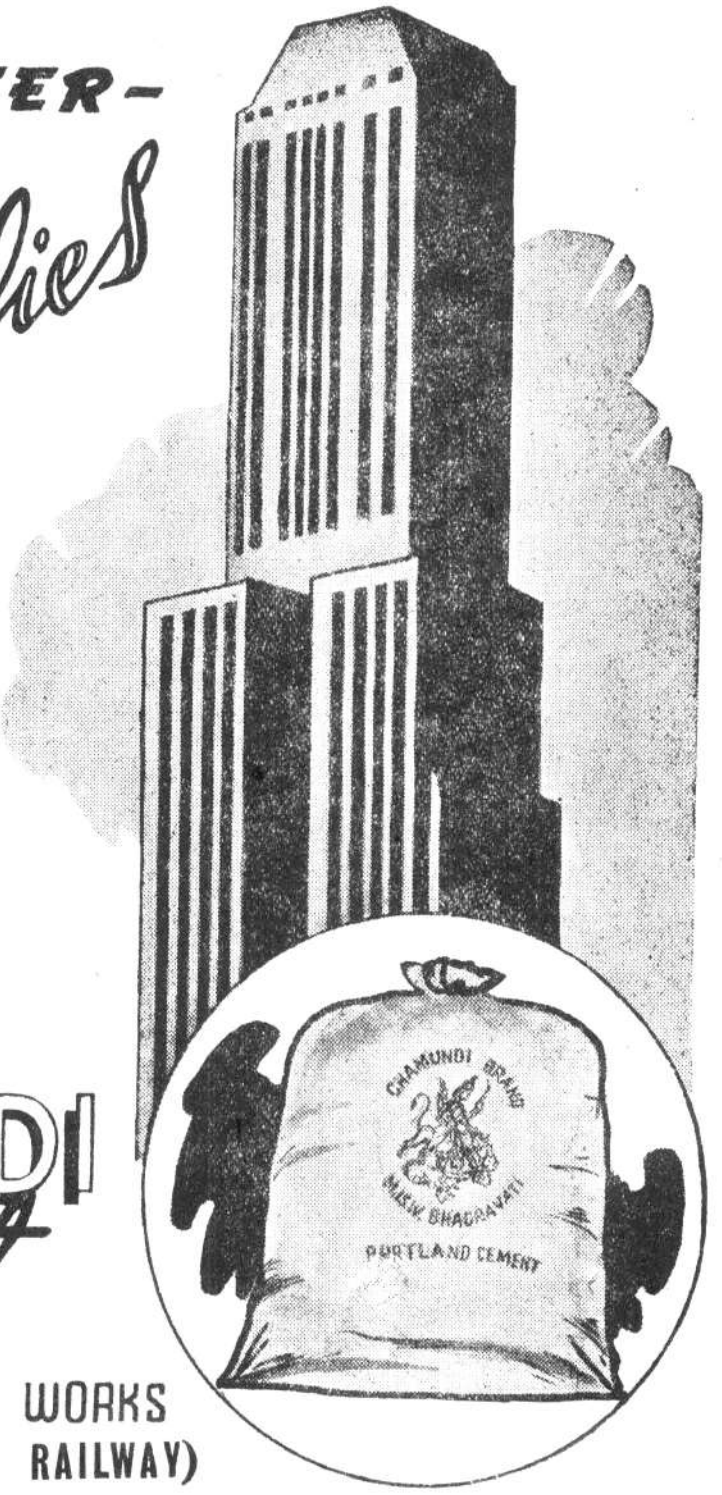
HOW TO PREPARE TEA



Boil fresh water. Warm up a clean pot. Put in one teaspoonful of good Indian tea for each person and one spoonful extra. Immediately the water boils, pour it on the tea. Let the tea brew for five minutes; then pour it into cups adding milk and sugar.

five cups of **INDIAN TEA** for one pice

BUILDING ENGINEER— *Specifies*



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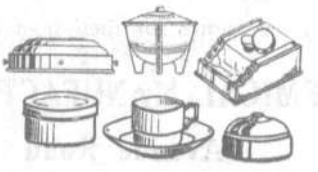

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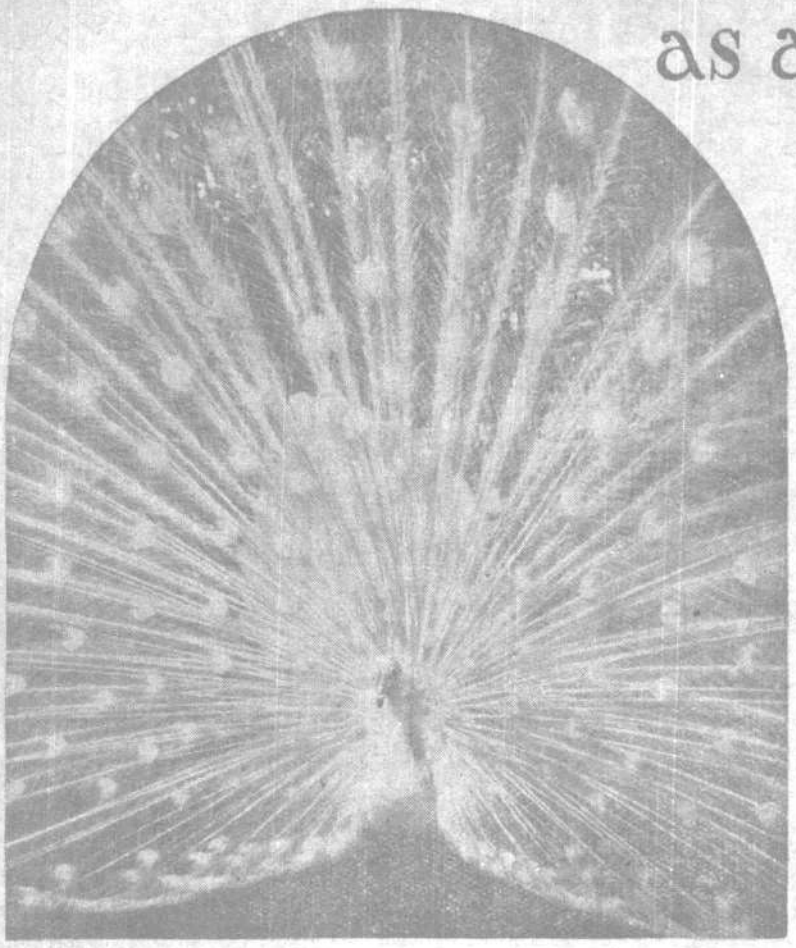

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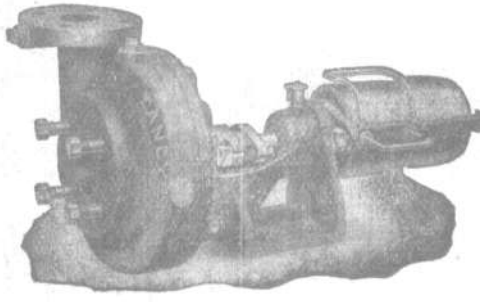

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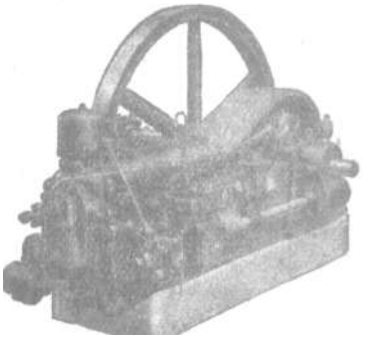

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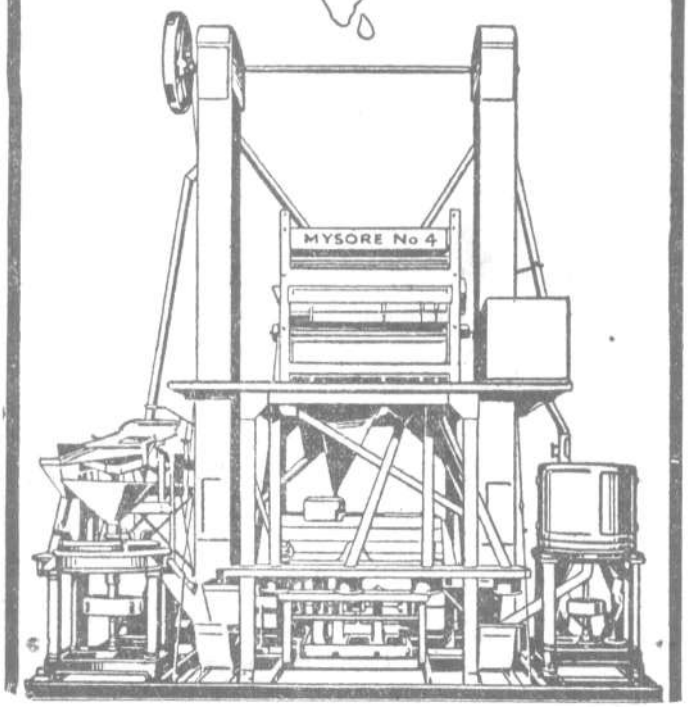

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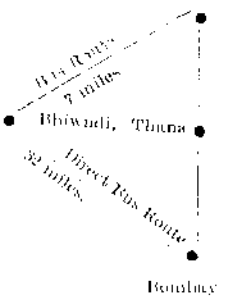

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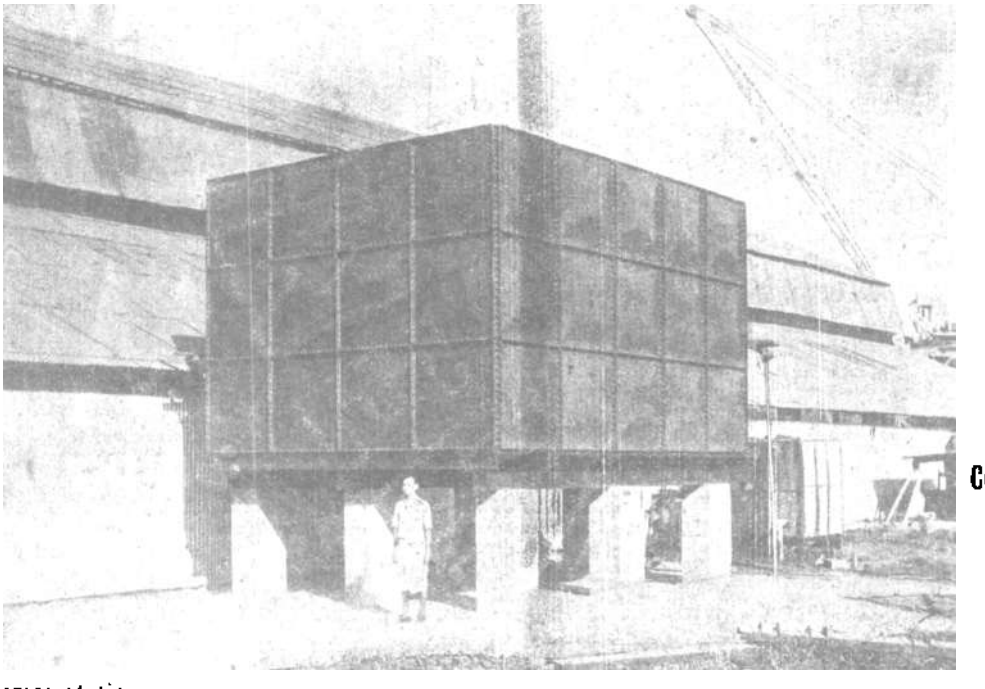

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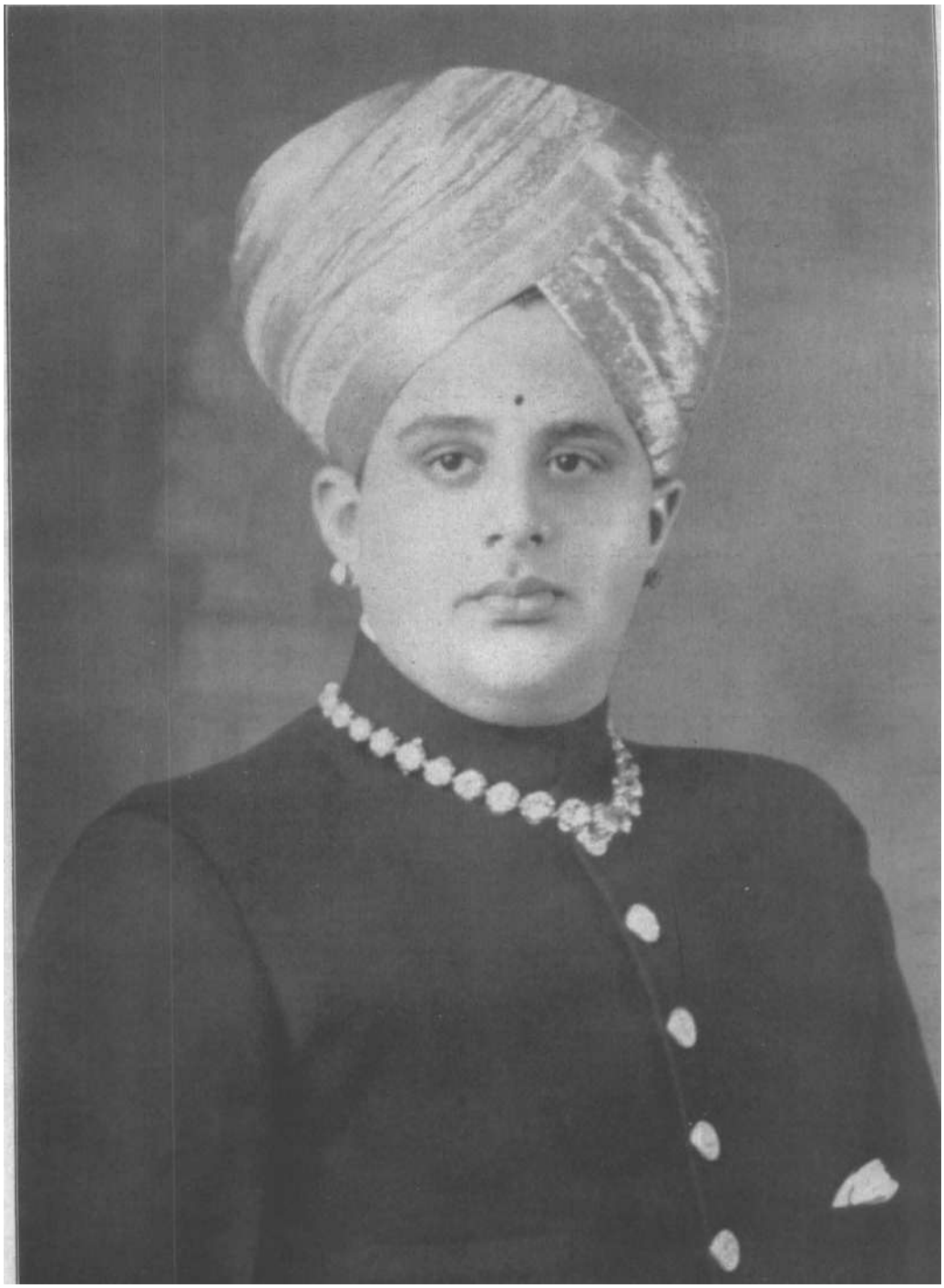

HIS HIGHNESS SRI JAYACHAMARAJA WADIYAR BAHADUR, MAHARAJA OF MYSORE.

MYSORE DASARA EXHIBITION

2nd October to 17th October 1940

Hours of opening of the Exhibition

From 8-30 a.m. to 12 noon

and

From 3 p.m. to 9-30 p.m.

DAILY

Admission

Season Ticket :: One Rupee

Ordinary Ticket :: Two Annas

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ONE ANNA

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HIS LATE HIGHNESS SRI KANTIRAVA NARASIMHARAJA WADIYAR BAHADUR, G.C.I.E., YUVARAJA OF MYSORE.

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FOREWORD

By *Rajamantrapravina* K. V. ANANTARAMAN, B.A.,

Second Member of Council,
Chairman, Mysore Dasara Exhibition Committee.

I GLADLY accede to the request of the Dasara Exhibition Committee to write a foreword to the Official Handbook of the Dasara Exhibition, 1940.

Since the last Exhibition, our State has sustained an irreparable loss by the demise of our beloved Maharaja, His Highness Sri Krishnaraja Wadiyar Bahadur, who took a keen and constant interest in the Dasara Exhibition, and always considered it as a valuable institution to stimulate the arts, industries and manufactures of the State. The increasing success of the Exhibition from year to year is principally due to His Highness' inspiration, support and patronage.

At the time of the last Exhibition, war clouds had just begun to blacken the sky. Since then catastrophic events have happened in Europe, and several great countries have collapsed and fallen under the Nazi heel. The British Empire, with the sympathy of all freedom-loving peoples of the world, has stood up to Hitlerism with unshakable courage and determination, and the struggle has reached an intense and acute stage. Mysore has in this time of the Empire's need offered substantial assistance in every way possible (in men, materials and resources) and it should be our constant endeavour to pool our strength and pull together so as to emerge victorious.

Due to the demands of the war, the Exhibition has acquired added importance. The resources of our country have to be developed in every possible way, not only to meet our needs but also to render the utmost help possible to the Empire for winning the war.

A permanent museum of industries, agriculture, fine arts, etc., will hereafter be housed in the attractive show-rooms which have been recently completed. This should appeal to the people who visit Mysore. Continuous improvements and additions to the Exhibition Buildings are being made so as to add to the amenities of exhibitors coming from all parts of India. I confidently look forward to the time when the Mysore Dasara Exhibition will become the recognized venue for the exhibition of every new development and achievement in the field of agriculture, industries and arts in India.

His Highness Sri Jayachamaraja Wadiyar Bahadur did us the honour of giving away the prizes awarded at the last Exhibition and gave us valuable advice and encouragement. I am sure that, with His Highness' valuable support and patronage, this useful institution will steadily grow in usefulness and service.

HIS HIGHNESS THE MAHARAJA IN PATTABHISHEKAM ROBES.

MYSORE DASARA EXHIBITION, 1940

MYSORE DASARA EXHIBITION, otherwise called the 'Wembly of India,' is as popular as or even more popular than ever in spite of the fact that the entire world is plunged in grief.

The Prospectus was sent to the prospective customers unusually late this year on account of the sad demise of His Highness the late Maharaja Sri Krishnaraja Wadiyar Bahadur on 3rd August 1940: nevertheless we have received several applications for stalls from all parts of India. Happily, the installation of His Highness Maharaja Sri Jaya Chamaraja Wadiyar Bahadur to the Throne of his illustrious ancestors augurs well for the brilliant success of this Exhibition.

The Exhibition main building now presents a grand appearance on account of the completion of the western wing and the construction of the ground floor of the eastern wing. The 32 display windows on the ground floor have been distributed amongst the several departments and the Industrial concerns of the State, thus forming the nucleus of the future Industrial Museum of Mysore. These windows have been nicely decorated with Neon Signs.

The allotment of stalls is as follows.—

Block 'A'	... Furniture, Metalware, Coir Mats and Leather goods.
Block 'B'	... Chemicals, Medicine and Toilet.
Block 'C & D'	... Textiles.
Block 'E'	... Electrical goods, Insurance, Books and Photo Studios.
Block 'K, L & R'	... Toys, Perfumery, Jewellery and Ivory goods.
Block 'G'	... Co-operative Societies, and Miscellaneous.
Block 'Q'	... Government Departments.
Block 'H'	... Food Products.
Block 'N-1'	... Red Cross.
Block 'N-2'	... Soaps.
Block 'M'	... Paints, Porcelain, Coffee and Sugar.

One noteworthy feature in the arrangement of stalls this year is that in 'G and Q' Blocks the passage which used to run in the centre, making it stuffy and uncomfortable to visitors, is now shifted to the sides.

The Red Cross Society of Mysore Branch has specially organized a raffle, a lucky dip and an auction sale of gifts received, in aid of the War Fund. They also propose to exhibit an ambulance car, well fitted up, and an A. R. P. shelter within the Exhibition grounds. A Book corner, containing literature on A. R. P. measures is also arranged.

The Department of Industries and Commerce, Mysore, gives demonstrations in the following Cottage Industries.—

Pottery.
Button Making.
Envelope Making.
Bangle Making.
Coir Rope Making.
Litho Printing.

The Ladies' Sub-Committee have proposed to conduct an Ideal Home Exhibition in the first floor of the new extension to prove to the visiting public that Mysore is self-sufficient in every way.

Fine Arts Section

Mr. Sarkis Katchadourian has come forward to adorn the central block with his Iranian, Sinhalese and Indian Frescoes paintings. He has won international recognition as an exponent of a new standard for the copying art. With experience, special technique and passion for his work, he captures the very life and rhythm of the original. Many beautiful paintings of great artists have been received from all parts of India and they are exhibited in the second floor—eastern wing.

Facilities

Arrangements for running Hindu, Mohamedan and European Restaurants have been made. Temporary Post and Telegraph Offices have been opened

and the Bank of Mysore, Limited, has also a branch within the premises for the convenience of Stall-holders and visitors. The Medical Department have opened a Dispensary for the use of the public. Guide Maps in Kannada and English are kept at the main entrance. Special sitting accommodation for ladies has been provided at the entrance of 'G and Q' Blocks.

Entertainment

A separate Amusements Committee has been formed this year to organize the several items of amusements. A Toddlers' Enclosure has also been formed inside the Exhibition premises for the exclusive use of children.

MYSORE,
13th September 1940.

S. RAMASWAMY,
Secretary,
Exhibition Committee.

Acknowledgments

The Exhibition management desires to thank the several contributors of excellent articles to the Exhibition Handbook; Messrs. The States Advertisement Service, Mysore, for securing the bulk of advertisements; the Times of India Press, Bombay, for the artistic printing of the cover pages; the Art Engraving Company, Mysore, and the Wesleyan Mission Press, Mysore, for the expeditious preparation of the necessary blocks; the Superintendent, Government Printing, Bangalore, for the excellent get up of this Handbook; and Mr. S. Ranga Iyer, the Publicity Officer to the Government of Mysore, for editing the Handbook in a splendid manner.

HIS HIGHNESS THE MAHARAJA ASCENDING THE THRONE.

His Highness' Message to Mysoreans calls for "spirit of unity and self-sacrifice"

THE PALACE, MYSORE,
8th September 1940.

MY BELOVED PEOPLE,

I HAVE been profoundly moved by the innumerable marks of respect and affection for my revered uncle, the LATE MAHARAJA SRI KRISHNARAJA WADIYAR BAHADUR, which have poured in from rich and poor, from high and low, from every quarter of the State. Such testimony to the loss which they as well as I have sustained has brought much consolation to me and to the members of my House, and will be a source of strength to sustain me in the great task upon which I am about to enter.

In succeeding to the Throne of Mysore I follow a great Ruler who loved you all, and who won your love by his love of God, his wisdom, his graciousness, his humility, his faithfulness to duty and his kingly greatness.

His memory will be ever with us. It is a bitter memory now when we are feeling the full shock of his loss, the gap he leaves in all our lives. It will grow sweeter as the years go on and as we learn to appreciate the more all that he meant to us, and to mould our lives by his.

It is now for us to dedicate ourselves to the fulfilment of his great task. And we shall succeed in fulfilling it if we so consecrate ourselves in the spirit of one great family. The world is very full of troubles to-day and it is only by meeting these troubles in a spirit of unity and self-sacrifice that we can win through. In this spirit I look upon this ceremony of ascending the Throne of my ancestors as a dedication of myself, my life and all I have to the service of the people of Mysore. But I am fully conscious that no effort of mine can succeed alone. I need your help and your co-operation, your confidence and your love.

May God grant me light and strength in the discharge of the sacred duty entrusted to me, and may His blessings in abundance rest on and brighten every hearth and home in Mysore.

JAYA CHAMARAJA WADIYAR.

• • • • •

ಮೈಸೂರು ಅರಮನೆ,
8ನೆಯ ಸೆಪ್ಟೆಂಬರ್ 1940.

ನನ್ನ ಪ್ರೀತಿ ಪಾತ್ರರಾದ ಪ್ರಜೆಗಳೆ,

ಪೂಜ್ಯರಾದ ನಮ್ಮ ದೊಡ್ಡಪ್ಪನವರು ಕೀರ್ತಿಶೇಷರಾದ ಮಹಾರಾಜ ಶ್ರೀ ಕೃಷ್ಣರಾಜ ಒಡೆಯರ್ ಬಹದ್ದೂರವರಲ್ಲಿ ಗೌರವವನ್ನೂ ಪ್ರೇಮವನ್ನೂ ತೋರಿ, ಶ್ರೀಮಂತರಿಂದಲೂ ಬಡವರಿಂದಲೂ, ಉನ್ನತಸ್ಥಾನದವರಿಂದಲೂ ಸಾಮಾನ್ಯರಿಂದಲೂ, ಸಂಸ್ಥಾನದ ಎಲ್ಲಾ ಕಡೆಗಳಿಂದ ಬಂದು ಸುರಿದ ಅಸಂಖ್ಯಾತ ಸಿದರ್ಶನಗಳಿಂದ ನನ್ನ ಹೃದಯ ಗಾಢವಾಗಿ ತಟ್ಟಿಹೋಗಿದೆ. ಅವರುಗಳೂ ನಾನೂ ಪಟ್ಟಿರುವ ನಷ್ಟ ಎಂತಹುದೆಂದು ಅವು ಸಾಕ್ಷ್ಯಪ್ರದರ್ಶನಗಳಿಸಿ, ನನಗೂ ನನ್ನ ಮನೆತನದ ಕುಟುಂಬವರ್ಗಕ್ಕೂ ಬಹಳವಾಗಿ ಮನಸ್ಸಮಾಧಾನವನ್ನು ತಂದಿವೆ; ಮತ್ತು ನಾನು ವಹಿಸಿಕೊಳ್ಳುತ್ತಿರುವ ಮಹತ್ಕಾರ್ಯದಲ್ಲಿ ನನಗೆ ಧೈರ್ಯವನ್ನು ಕೊಡುವ ಬೆಂಬಲದ ಆಧಾರವಾಗಿವೆ.

ಮೈಸೂರು ಸಿಂಹಾಸನಕ್ಕೆ ಅನುಕ್ರಮವಾಗಿ ನಾನು ಬರುವುದರಲ್ಲಿ ಮಹಾನುಭಾವರಾದ ರಾಜಶ್ರೇಷ್ಠರನ್ನು ಹಿಂಬಾಲಿಸುತ್ತಿದ್ದೇನೆ; ಅವರು ನಿಮ್ಮೆಲ್ಲರಲ್ಲೂ ಪ್ರೇಮವಿಟ್ಟಿದ್ದರು; ತಮ್ಮ ದೈವಭಕ್ತಿಯಿಂದ, ತಮ್ಮ ಜ್ಞಾನದಿಂದ, ತಮ್ಮ ಕೃಪಾಪ್ರಸನ್ನತೆಯಿಂದ, ತಮ್ಮ ವಿನಯದಿಂದ, ತಮ್ಮ ಕರ್ತವ್ಯನಿಷ್ಠತೆಯಿಂದ, ತಮ್ಮ ರಾಜಗಾಂಭೀರ್ಯದಿಂದ, ರಾಜ್ಯಭಾರ ಮಹಿಮೆಯಿಂದ, ನಿಮ್ಮೆಲ್ಲರ ಪ್ರೇಮವನ್ನು ಆಕರ್ಷಿಸಿದ್ದರು.

ಅವರ ನೆನಪು ಎಂದೆಂದಿಗೂ ನಮ್ಮಲ್ಲಿ ನಿಲ್ಲುವುದು. ಈಗ ಅದು ಅವರ ನಷ್ಟದ ಪೂರ್ಣಾಘಾತವನ್ನು, ನಮ್ಮ ಬಾಳಿನಲ್ಲಿ ಅವರು ಬಿಟ್ಟ ದೊಡ್ಡ ಕೊರತೆಯನ್ನು, ಅನುಭವಿಸುತ್ತಿರುವ ನಮಗೆ ದುಸ್ಸಹವಾಗಿರುವುದು. ವರ್ಷಗಳು ಕಳೆದಂತೆಲ್ಲಾ, ಅವರು ನಮಗೆ ಏನಾಗಿದ್ದರು ಆ ಅರ್ಥವನ್ನೆಲ್ಲಾ ಬೆರೆಗೆಂದು ತಿಳಿದಂತೆಲ್ಲಾ, ಅವರ ಬಾಳಿನಿಂದ ನಮ್ಮ ಬಾಳನ್ನು ನಾವು ತಿದ್ದುವುದನ್ನು ಕಲತಂತೆಲ್ಲಾ, ಆ ನೆನಪು ನಮಗೆ ಸವಿಯಾದ ನೆನಪಾಗಿ ಬೆಳೆಯುವುದು.

ಈಗ ನಾವು ಅವರ ಮಹತ್ಕಾರ್ಯತ್ನವನ್ನು ಈಡೇರಿಸುವುದಕ್ಕಾಗಿ ನಮ್ಮನ್ನು ಅರ್ಪಣಮಾಡಿಕೊಳ್ಳಬೇಕಾಗಿದೆ. ಒಂದು ದೊಡ್ಡ ಕುಟುಂಬದ ಭಾವನೆಯಲ್ಲಿ ನಮ್ಮನ್ನು ಮುಡಿಪುಕಟ್ಟಿಕೊಳ್ಳುವುದಾದರೆ, ನಾವು ಅದನ್ನು ಈಡೇರಿಸುವುದರಲ್ಲಿ ಕೃತಾರ್ಥರಾಗಬಲ್ಲೆವು. ಈ ಕಾಲದಲ್ಲಿ ಲೋಕ ಎಡರು ತೊಡರುಗಳಿಂದ ತುಂಬಿಹೋಗಿದೆ; ಈ ಕಷ್ಟಗಳನ್ನು ಒಕ್ಕಟ್ಟಿನಿಂದಲೂ ಸ್ವಾರ್ಥತ್ಯಾಗದಿಂದಲೂ ಎದುರಿಸಿದರೆ ಮಾತ್ರ ನಾವು ಗೆದ್ದುಕೊಂಡು ಈಚೆಗೆ ಬರಬಹುದು. ಈ ಭಾವನೆಯಲ್ಲಿ, ನಾನು ನನ್ನ ಹಿರಿಯರ ಸಿಂಹಾಸನವನ್ನೇರುವ ಈ ವ್ರತಸಮಾರಂಭವನ್ನು, ನನ್ನನ್ನೂ, ನನ್ನ ಜೀವ ಮಾನವನ್ನೂ ನನ್ನ ಸಕಲ ಸರ್ವಸ್ವವನ್ನೂ ಮೈಸೂರು ಸಂಸ್ಥಾನದ ಜನರ ಸೇವೆಗಾಗಿ ಸಮರ್ಪಣ ದೀಕ್ಷೆಯೆಂಬುದಾಗಿ ಎಣಿಸುತ್ತೇನೆ. ಇದರಲ್ಲಿ ನನ್ನೊಬ್ಬನ ಪ್ರಯತ್ನವೊಂದೇ ಜಯಶಾಲಿಯಾಗಲಾರದೆಂದು ನಾನು ಚೆನ್ನಾಗಿ ಅರಿತಿದ್ದೇನೆ. ನಿಮ್ಮ ನೆರವು, ನಿಮ್ಮ ಸಹಕಾರ, ನಿಮ್ಮ ನಂಬಿಕೆ, ನಿಮ್ಮ ಪ್ರೇಮ ನನಗೆ ಬೇಕು.

ನನ್ನ ವಶಕ್ಕೆ ಒಪ್ಪಿಸಿರುವ ಪವಿತ್ರಕರ್ತವ್ಯದ ನಿರ್ವಹಣೆಗನ್ನೂ, ಶಕ್ತಿಯನ್ನೂ ಭಗವಂತನು ನನಗೆ ಅನುಗ್ರಹಿಸಲಿ; ವರಪ್ರಸಾದಗಳು ಯಥೇಷ್ಟವಾಗಿ ಮೈಸೂರು ಸಂಸ್ಥಾನ ಮನೆಯಲ್ಲಿಯೂ ತೊಟ್ಟಿಯಲ್ಲಿಯೂ ಹೊಕ್ಕು ನೆಲಸಿ.

ಶ್ರೀ ಜಯಚಾವ

"MYSORE HAS BROUGHT HONOUR TO INDIA"

MESSAGE BY THE HON'BLE SIR SIKANDAR HAYAT KHAN,

Premier, Punjab.

THE Dasara Exhibition organised by the Mysore State is a great contribution towards the cultural and industrial improvement of the country, and as such I wish it God-speed. Mysore State has by now established its reputation, which has brought honour to India, for its all-round administrative efficiency and improvement, for which the credit primarily goes to the late lamented and distinguished Ruler of Mysore assisted by his far-sighted Dewan. I hope and pray that the best traditions of the distinguished House of Mysore and the reputation of the State will worthily be maintained in the hands of the promising new Ruler of Mysore.

The exhibitions, organised on proper lines, serve the dual purpose of bringing the producers and consumers together and acquainting them with each other's requirements. In this sphere the Dasara Exhibition should prove an asset of great utility to the State and to the country.

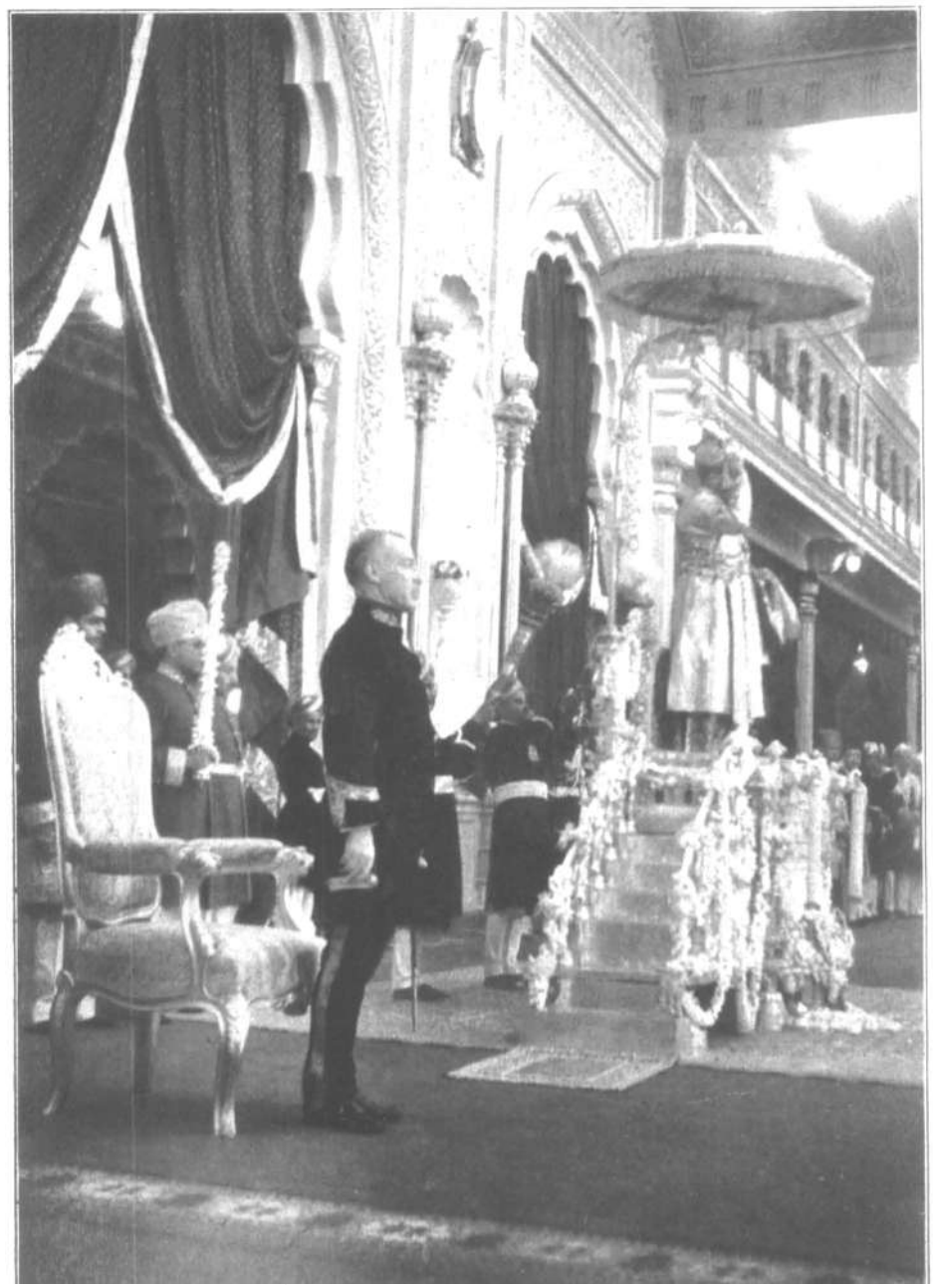
"MYSORE WILL GROW FROM STRENGTH TO STRENGTH"

BY DR. SIR K. V. REDDI, K.C.I.E., D.LITT., M.L.C.,

Vice-Chancellor, Annamalai University.

MYSORE is stricken. She has received too severe a blow. The King is dead; Long live the King! If the young Maharaja walks in the footsteps of his great predecessor, Mysore can be sure of as great happiness and prosperity as she had enjoyed during the reign of the late Maharaja. He has the assistance of an experienced Dewan, a talented and profound Statesman.

Mysore is God-blessed. She has Gold and Iron [illegible] and Sandalwood. She has water-falls and a [illegible]ful supply of Electricity. Her people are loyal and industrious. A long reign of a benevolent Ruler, who was at once a devotee of God and of the happiness of his subjects and a long succession of able Ministers and Administrators were responsible for the peace and contentment of the people and for the development of Industries and Education. Blessed with a most salubrious climate her fertile fields can long contribute to self-sufficiency in food supply. Mysore has nothing to be anxious about. She will grow from strength to strength and from prosperity to greater prosperity.



HIS HIGHNESS THE MAHARAJA OF MYSORE RECEIVING THE SALUTE OF THE TROOPS FROM THE THRONE.

MYSORE'S PROGRESSIVE ACHIEVEMENTS

By F. E. James.

I HAVE been asked to write a short article on any aspect of Mysore for the Dasara Exhibition Handbook. I gladly comply, not because I am qualified to describe in detail the many achievements and excellences of the Mysore State, but because I am glad to take an opportunity of paying a tribute to its people and Administration.

As one moves about one is constantly impressed with the great and justifiable pride which the Mysorean has in the State. The merchant, the planter, the administrator—all take a personal interest and claim a direct share in Mysore's progressive achievements.

The late Maharaja (of blessed memory) and the present Dewan, his boyhood's friend and in later years his servant and counsellor, have left an indelible mark upon Mysore. The welfare of its people has always been their concern, deep and constant. A few minutes' talk with either of them made one realise that their thoughts were always with their people, and in all their actions, whether in the State or in the larger world outside, Mysore was placed first.

It has been said that the Administration in Mysore has cared mainly for the establishment of large State industries and the beautification of the main towns and cities, and that the interest of the rural population has been neglected.

That is an unjust criticism. It is true that large industries have been established with State help, but it is also true that in the direction of public health, agricultural development, cottage industries, and rural uplift generally, there has been much more progress than in most provinces in British India.

As for the beautification of the towns and cities, Bangalore and Mysore are better planned and cleaner cities than most of their size in British India. It is also true, however, that the smaller towns have taken their cue from the larger towns and that the villages are now taking their cue from the smaller towns. One can see the beginnings of a sense of order and beauty in some of the larger villages through which one passes, and I am told that village people are asking for small amenities on the lines of those provided in the towns to an increasing extent. Water supply, sanitation, well-run health centres, and electric power and light—these are still badly needed in many parts of the State, but the Administration is moving ahead and large schemes are now under way, which will eventually help to realise Mysore's ideal of light, pure water, adequate sanitation, and a health unit in every village.

The young Ruler, Sri Jayachamarajendra Wadiyar, who has just ascended the Throne succeeds to a noble tradition laid down by his uncle. He is fortunate also in inheriting from his predecessors a well organised, proud, honest, efficient and stable Administration, whose one desire is to carry out as effectively and quickly as possible a wise and progressive policy based upon responsiveness to the needs of the people and the fullest co-operation with their representatives.

REMINISCENCES OF MYSORE.

By B. S. Moonje.

I HAD an occasion to visit the Mysore State twice—once on my private business and, for the second time, a year ago as a member of the Army Indianization Committee of the Government of India.

With the very kind assistance of the Dewan, Sir Mirza Ismail, I visited several important places, both in the town and in the country. The very first impression after visit to the cities of Bangalore and Mysore is most striking and pleasant. One cannot fail to be impressed with the cleanliness and well-regulated arrangements in the general scheme of Town Planning. The city of Bangalore seems rapidly industrialising and is already one of the most important centres of scientific education in industrial and commercial sphere. While visiting Bangalore one cannot resist the temptation of visiting the Crafts and Arts Emporium, which is a speciality of arts in sandalwood and ivory for which Mysore is famous throughout India.

While Bangalore's appearance is of a modern town, the City of Mysore is stately and royal in appearance and its make. The Princely palace is grand and impressive, but the speciality of the City of Mysore lies in the bund of the Cauvery river and the feast of the fountains fed with scientifically arranged, different-coloured electric lights, which is called the Brindavan. It exercises a kind of magic on the minds of sight-seers.

I remember with pleasure that I had an occasion to address the boys of the Mysore University.

Next we visited the grand Electric Power House and Silk and Sugar factories, in the country.

The reputation of Mysore as a first class Indian State of administrative efficiency is the hand-work of a succession of able administrators.

Here I should like to impress both upon the State authorities and people the need of ever keeping fresh in mind, the old history of general rough and tumble of polities of a hundred and fifty years ago, so that the State should ever be vigilant in keeping the army and police in line with the tradition of the State.

The late Maharaja was a saintly person and was thus a remarkable amalgum of political sbrewdness and saintly virtues. His saintly soul will be watching over the destiny of the state and bless and inspire the young Maharaja to follow in his footsteps.

MYSORE AND THE HARIJAN

By Munshi Iswar Saran.

THE Harijan problem is by no means easy of solution. Reformers have to fight age-long prejudice, ignorance or selfishness on the one hand, and sloth or indifference, on the other. From certain points of view, indifference is a shade worse than open hostility. Very often a Hindu sees an untouchable being ill-treated and with a shrug of his shoulder passes on. This passive acquiescence in wrong is responsible for the continuance of untouchability and many other evils. Hindus have to develop active virtues if they desire to regain the respect of their fellow-men. The civilised world cannot think much of Hindus and Hinduism as long as they tolerate untouchability in any shape or form.

It is therefore a matter of thankfulness that the Mysore State is making praiseworthy efforts to wipe off this ugly stain from the fair name of India. The State and its distinguished Dewan are entitled to our warm acknowledgments. It is true that in this enlightened State more is being done for Harijans than in many other parts of the country but it must be clearly realised that Mysore will have to increase and multiply its activities at least ten-fold if it desires to destroy untouchability within a reasonable period of time.

May it be hoped that something definite will be done in the near future in regard to the problem of temple-entry? There are occasions when public opinion has to be led. Legislature in many cases follows public opinion but when a palpable wrong has to be set right it courageously forestalls public opinion. *Suttee* would have flourished for a long time more, if the British Government had waited for public opinion to demand its abolition. The Mysore State will considerably add to our obligations if it will take measures to stop interference with the unquestionable right of Harijans to worship in public temples.

HIS HIGHNESS THE MAHARAJA SEATED ON THE BHADRASANA DURING THE DURBAR ON 29TH AUGUST 1940.

MYSORE AS I KNOW IT

By Sir Srinivasa Sarma, Kt., C.I.E.

To a frequent visitor to Mysore it is a privilege to be asked to write about that State. Instead of familiarity dulling my appreciation, each fresh visit has only heightened my delight and admiration. My acquaintance with Mysore dates far back and every time I have returned I have some fresh sign of the State's prosperity and the people's happiness.

The one feature that has made the most striking impression on me has been the village in Mysore. I have been fortunate in that I have travelled extensively both in India and in Europe. I have been an eager observer of the countries I have visited and of their people and their manners and their customs and their modes of living. But, of all the places I have seen, I have been most struck by the Mysore village. In the very atmosphere there is an air of happiness which can come only from the contentment of the people.

To the Indian peasant, water for his fields is the life blood. In Mysore Nature has been kind to man and man has improved upon Nature's handiwork. The great river upon whose bounty a large part of the neighbouring presidency, Madras, depends for its prosperity, has its source in Mysore and that river and her tributaries have been so controlled and conserved that she irrigates Mysore's rich fields, illuminates the State's cities and villages, drives its factory wheels and works its goldfields. Where the broad Cauvery cannot reach, a planned and elaborate system of canal irrigation, of which the brightest achievement is the Irwin Canal, fertilises the rich earth making it yield up its periodic treasure.

If we turn from the smiling countryside to Mysore's towns, it is difficult at first to realise that we have come to the place where the pavement starts. Even Bangalore, which because of its proximity to British Bangalore, may be expected to be urban, abounds in parks and gardens whose trim greenery is a refreshment to the eye. To call Mysore a 'garden city' would not be quite correct. Such loving attention has been lavished upon its streets and parks, such ingenuity has been shown in its pleasing artistic decoration, such meticulous care has been taken of its temples and other public buildings that it is difficult to realise that Mysore is a large city of several thousand inhabitants and not the private *pleasaunce* and garden of a loving owner. Such indeed it was under the late great Maharaja.

To that great and accomplished gentleman Mysore and its people owe a deep debt. Of this debt no repayment is necessary or was expected. Beneath the somewhat austere exterior, the late Maharaja concealed a mind whose one thought was of the State and a heart whose one preoccupation was his people. He lived for them, he worked for them, he wrought for them and never did he seek or claim the plaudits of the people or their acclaim. His conception of his duties as a ruler was on an almost Vedic plane and he died as he lived, a great man and a great prince.

On the young but sturdy shoulders of his talented nephew the mantle has fallen. No hurried stripling comes fortuitously to the *gadi*. The young Maharaja has been carefully trained and educated, to bear worthily the great responsibilities which he has now assumed. In the arts of government he has been taught; in the more difficult task of dealing with men he has been trained; and he brings to his great task a native talent and a high intellect which are the happiest augury for the future of this great State.

At his right hand he has, happily, with him, to guide, to counsel and to help him, to bring happiness and prosperity to his expectant people, a great and experienced statesman, Sir Mirza Ismail, his uncle's trusted friend and loyal servant. Prosperous and contented as Mysore has been, under the ægis of its new ruler a rosier vista stretches before it.

IN MEMORIAM

By Prof. Radha Kumud Mookerji, M.A., P.R.S., Ph.D., M.L.C.

IT is with a heavy heart that I pen these lines to discharge a most melancholy duty of paying my humble homage to the memory of His Highness Sri Krishna Raja Wadiyar Bahadur, G.C.S.I., G.B.E., Maharaja of Mysore, who has just passed away into the Eternal amid the lamentations of the whole province of Mysore and indeed of the entire continent of India. I remember today with gratitude the privilege I had of serving him directly as an officer of his Government. In him Mysore has lost the greatest ruler in its long history, and India a Prince of the most saintly character combined with a most modern outlook and ideals of administration. He was the best embodiment of the truth of the *Mahābhārata* saying: "Rañjitāścha prajāḥ sarvāstena rājeti chochyate." The *Rājā* is so called from "*prakriti-rañjanāt*", from his satisfying his subjects by ministering to their needs. The late Maharaja gave a concrete expression in his life and work to the following ideal of royalty in Hindu Polity:

> "*Prajā sukhe sukhaṁ rājñaḥ*
> *Prajānāṁcha hite hitaṁ* |
> *Nātmaprājam sukhaṁ rājñaḥ*
> *Prajānāṁcha sukhe sukhaṁ* ||"

"In the happiness of his subjects lies the King's happiness; in their good his good; the satisfaction of his subjects, and not his own, he should seek."

A ruler of these ideals which he does not hold as mere subjective maxims and abstractions but which he gives effect to in the details of his life and work sloves much of the difficult problems of Government, Constitution and Democracy. One should not make too much of the fetish of Democracy. Democracy is very often destroyed in the spirit and kept up only in the letter. Even the best Democracy is but a Dictatorship in disguise. No special sanctity should attach on principle to election and electoral methods. Election does not always produce the best sovereign for a State. There may not be an unmixed gain in throwing open the Sovereignty, the headship of the State, to election. It is possible for a country to have a ruler who can represent his people better than an elected head. For, after all, the elected President of a Democracy is a partisan. He is elected on his party-ticket. Outside the sphere which the Constitution assigns to him, he must humour his party, and keep in mind its mandates and programmes which may not be to the liking of the other organised parties of the State. In the case of a ruler like Sri Krishna Raja Wadiyar Bahadur, the people found in him their true representative, the best guardian of their real interests and welfare, the supreme spokesman of their hopes and aspirations. The soul of the people uttered itself through him. He *was* the people because he was so completely identified with them in every way. He was above party and was by nature possessed of that detached and disinterested mentality which is at the foundation of this kind of identity between the ruler and the ruled. It is this mentality which enables such a sovereign to always keep in view the interests of the country as a whole, and not merely the separate interests of its different communities, and thus to promote the greatest good of the greatest number. There is some advantage to the country from such a sovereign, which cannot be found in the passing Presidents of Democracies. He is the stable factor of the State, the anchor to which it can hold in a vast ocean of change in which so may established Democracies, Kingships and Empires have been submerged. Such a sovereign represents in his person and in his house the fundamental unity of the State, the continuity of its history, its life, its policy, its ideals, and its traditions. As I once stated on this subject: "Here the Head of the State represents the people directly and primarily in his person, standing to them in an intimate and vital relationship. This relationship is personal, natural and profound, one of sentiment and affection, and sometimes even sweetened by a touch of romance, a relationship which is more constant and binding than the legal, factitious, consensual, mechanical, and impersonal relationship obtaining between the electorate and the elected in a formal Democracy."

HIS HIGHNESS THE MAHARAJA SEATED ON THE THRONE.

This organic relationship between a ruler and his people is possible only in the Hindu view and scheme of Polity which counts *Dharma* as the true sovereign of the State and the ruler as the *Daṇḍa* or the Executive, the wielder of the sceptre of sovereignty and of the sword of justice, to uphold and enforce the decrees of *Dharma* as the spiritual sovereign symbolising the Rule of Law. It is this idealism which alone can make a success of hereditary royalty. The late Maharaja of Mysore has been the greatest vindication of the Hindu theory of the State and of the pattern of its polity Considering some of the excesses and abuses of Democracy and of the electioneering on which it is based, of which the world is a sad witness today, one is inclined to despair of Democracy and exclaim in the words of warning uttered by the poet, Pope:

For forms of Government let fools contest!
Whate'er is best administered is the best!

"National Government"

This recalls to my mind one great and strong point in Mysore's Government. It is completely national Government in the sense that it is manned by a national personnel from top to bottom. In the so called Democracies of the British India provinces, there is an important deduction from Democracy in the foreign personnel of their administration, which the Constitution must keep up as a steel frame of British manufacture. I have had recently the privilege of seeing with my own eyes once again the working of the administrative system in Mysore under the dynamic idealism and drive of its universally respected head, the Dowan, Sir Mirza Mohammad Ismail. The measures for public welfare materialise in a month in Mysore, where they would take a year in the British India Provinces, through the delays, debates and discussions of their so called democratic legislatures which are sometimes constituted as nothing but communal despotisms on the basis of the unprecedented system of statutory majorities and statutory minorities.

But I must not import the strong winds of British India politics into the atmosphere of Mysore where the people's needs and grievances, hopes and aspirations, are anticipated by their administrators who are of them, bound to them in ties of blood who are the cream of the community, and their natural leaders. There is here no gulf between the governors and the governed, between the officials and the non-officials. And so Mysore is advancing by leaps and bounds and making rapid strides in progress in all spheres of her national life, economic, educational, social and hygienic, with all its nooks and corners being held at his fingers' ends by the indefatigable head of the Administration, Sir Mirza Ismail, who counts his officers and the non-official public leaders in the districts as his personal friends and can always count upon their spontaneous co-operation in the great task into which he has thrown himself heart and soul, the task of building up Mysore as a model and modern State. Everyone who has the privilege of coming into close contact with him cannot but be alive to the unique feature of his personality that he always thinks, feels and acts in terms of Mysore as a most loyal and representative Mysorean.

The New Ruler

I feel that the late Maharaja of Mysore will always be a living presence, an immortal spiritual influence, which will pervade Mysore for a long time to come. I am sure this inspiration will build up the new Maharaja of Mysore, a youth of high education, and great promise, as a Prince of whom Mysore and the whole of India will be proud.

I once again pay my humble tribute of respect to the revered memory of my late master, Sri Krishna Raja Wadiyar Bahadur, and tender my respectful homage to the new Sovereign of Mysore whom God grant a long life of health, happiness, and successful administration.

BANGALORE THE BEAUTIFUL

By Prof. S. N. Pherwani, M.A.,
Shikarpur, Sind.

'A THING of beauty is a joy for ever,' so sang the poet. His Highness the Maharaja, and his Dewan, Sir Mirza, evidently have full faith in that dictum. Nature has blessed the State with undulating and rugged rocks and plains and hollows of greenery and bewitching beauty. And the rulers have tried to add to that by a grand lay-out of spacious roads, lovely lawns, fairy fountains, grand gardens and superb structures. High aesthetic and artistic taste is apparent through every widened road and garden laid out and every pile of public buildings put up for health or industry, education or enjoyment. Pictures and pages of "Picturesque Mysore" give a photographic record and graphic pen poesies of the beauty spots and archæological and architectural monuments of Mysore.

The very first evening I arrived I was taken to taste the ravishing touch of the small fairy fountain where the three rings of vertical and slanting water spouts work at different pressures, and suffused with changing coloured lights produce flowing patterns of bewitching beauty on which every gust of breeze further does its work of directing the dance of delight. Men, women and children are all attracted to it and put through the baptism of beauty by these fascinating fountain formations.

The State that serves

Next morning I had a peep into the Mental Hospital. The elevated site, open air surroundings, the beautiful panoramas spread out on all sides, and the neat and up-to-date arrangements are all calculated to soothe and brace up and minister to minds diseased. When visiting our Mental Hospital in Sind situated at Gidubandar it had at once struck me that in any scientific treatment of mental disorders we need not only a big garden sanatorium and physicians of the body or natural and physiological side of the treatment but much more than that, or at least equally the psychological side of the diagnosis and treatment, Psycho-analysis and Psychiatry of Jung, Freud, Adler, etc., as well as re-educational methods of Seguin, Itard, Montessorie, Decroly, coupled with modern performance and mental tests at every stage to guide and find out the results of our treatment. I suggested to my friends the close co-operation of the Professor of Psychology with the Doctor of Physiology and Medicine to bring wholeness to disintegrated minds and bodies. In Mysore I found the realisation of my dreams. Here we have a sane combination of Physiological diagnosis and treatment along with the Psychological diagnosis and treatment, methods of Nature-cure like Hydropathy, coupled with Ergo Therapy, the light occupation cure to re-educate people out of their mental derangements. But the great significance of it all to my mind was the modern progressive outlook and the spirit of sympathy and service which must have initiated this change from humdrum routine to the adoption of progressive modern methods.

Medical Relief Institutions

The spirit of serving the subjects, and relieving their sufferings, is abundantly manifested throughout the wonderfully up-to-date hospitals for men, women and children, Maternity work, Child Welfare, Medical Inspection of school children, etc. There are facilities for Radiological treatment, Electro-therapy, Hydro-therapy, as well as every kind of general and special medical and surgical treatment, and a generous and growing provision of beds for indoor treatment. The Victoria Hospital for the sick and suffering and the Vani Vilas Hospital for women, the two hospitals that I went round, would do credit to any city. Besides that, there is the Minto Ophthalmic Hospital reputed to be one of the best of its kind in India, and taken advantage of by sufferers from all over the country.

The anxiety of the State to do the best for the health and medical relief of the subjects is evident

HIS HIGHNESS THE MAHARAJA SEATED ON THE THRONE, ANOTHER VIEW.

from the way its Department of Public Health is organised, with its bureaux of administration, laboratories, education, sanitary engineering, rural health and epidemiology. The Bureau of Administration looks after City Health Organisation, District Organisations, Municipal Organisations and Voluntary Organisations. The Bureau of Sanitary Engineering looks after what elsewhere are Municipal and Local Board functions, *viz.*, water supply, drainage, sanitary fittings, town planning, wells and latrines. The Bureau of Rural Health has a Health Training Centre at Closepet and a Rural Health Unit at Mandya. I personally saw the one at Closepet and the way it works in close co-ordination with Rural Welfare. Sind has a lot to learn from Mysore in this direction.

Industrial Evolution in Mysore

What our States and British administered Provinces can do in the way of Industrial development and provision of employment for its people is very well illustrated by the efforts being made by the Mysore State for its own Industrial Development. The Mysorean Ideal in this respect is enunciated by the following words of the Dewan of Mysore Sir Mirza M. Ismail whose enthusiasm in this as well as the Aesthetic side, and Health as well as Educational and Rural Uplift side is indeed marvellous. Said he in his broadcast talk on Mysore, "We (Mysoreans) are very proud of our factories, and at the risk of being called provincial, try to set before all true Mysoreans the ideal that they should wash themselves with Mysore soap, dry themselves with Mysore towels, clothe themselves in Mysore silks, ride Mysore horses, eat abundant Mysore food, drink Mysore coffee with Mysore sugar, build their houses with Mysore cement, Mysore timber and Mysore steel, furnish their houses with Mysore furniture, and write their letters on Mysore paper." To this, I would only add that every State as well as every Province should act in the spirit of true Swadeshi and prefer goods made nearer to those more remote and aim at becoming more and more self-supplying and self-employing, and adjust its educational machinery to the available and necessary employments so that the people everywhere may conform to Ford's ideal of buying what they make, and making what they buy and using what they produce, and producing increasingly what they use, so as to afford maximum of mutual employment within their region.

Mysore has fourteen State-owned industries, nine large scale State-subsidised manufacturing concerns, besides seven large scale industries to which considerable facilities in the shape of free grant of sites have been extended. For the moment, it is keenly thinking of extending cottage industries, so that villagers and people in the suburbs may usefully employ their spare labour and there may be healthy decentralisation of industry and widespread avenues of self-employment nearest one's hearth and home.

Eugenic birth, health, education and employment are the birth-right of every citizen in a civilised State. Let all the States and Provinces emulate Mysore in affording these social facilities to every one of their citizens.

Rural Welfare Centre at Closepet

India lives in the villages. There is a great deal of talk of village uplift, and rural reconstruction. To me it appears from what I saw at Closepet that Mysore is in the forefront of this movement too. What the rural areas need is not only better sanitation and better health, but better farming and better industries, co-operative economy and facilities of education according to their environmental and occupational needs. The Rural Welfare Centre aims at co-ordination of effort in all these directions. There are schemes for better sanitation through Village Health Guilds, Village Panchayets, and cheap housing, better water supply and drainage, better latrines, etc. A model village house costs Rs. 75 in materials, the villagers are supposed to take to mutual aid in building their own houses from the materials provided. The State gives a free grant of Rs. 40 for each house, and so the farmer has to give only Rs. 35 to be owner of his own healthy house, with individual bore latrine or collective sanitary arrangements of approved type.

He is helped to add to his income by bee-keeping, better seeds, better farming, etc. Health, agriculture, rural crafts and industries, sericulture, co-operative economy, utilisation of forest products are all aided and improved.

Sind has a lot to learn from the scheme of rural welfare and rural health work going on in Mysore in this centre. The best of us have much to learn from the rest of us, and certainly the rest of us have much to learn from and exert, to come up to the level of the best of us. Mysore is really progressive in this direction.

Women's Educational and Social Service

Bangalore has a separate College for women, besides a Government High School. There are four Missionary High Schools for girls besides one by the Mahila Seva Samaj. The Mahila Seva Samaj Women's Service League is run entirely under the management of women and has been doing splendid work. The Samaj celebrated its Silver Jubilee in 1938. It carries on a number of beneficent activities besides the High School. Thus it has a middle school, a flock of Blue Birds, special school for adult women, a nursery school, a pathasala, domestic science classes, music, painting, Hindi and religious classes, besides a baby clinic and sports and games for ladies. Lady Raman has lately started a Seva Sadan, wherein she houses orphans, widows and destitute girls. Everything in the Seva Sadan is managed by the inmates themselves. There is thus a practical training given in domestic arts. An admirable atmosphere of simplicity, religious idealism, and mutual service is maintained.

I had the pleasure of meeting and personally talking with the heads of departments of Medicine, Health, Education and Industry. The Dewan Sahib, Sir Mirza, was also kind enough to grant me an interview. I am grateful to all of them for their uniform courtesy, considerateness and open mindedness. All of them from the Dewan downwards are inspired by a spirit of service and devotion to the welfare of the subjects of the State. I found all of them keen on improvement in the respective branches of their activity. The air of patronage was completely absent. All of them consider themselves the servants of the people, anxious to do their best. There is no unnecessary delay in putting through any really useful and promising suggestions of added service.

GOVERNMENT CENTRAL INDUSTRIAL WORKSHOP, BANGALORE

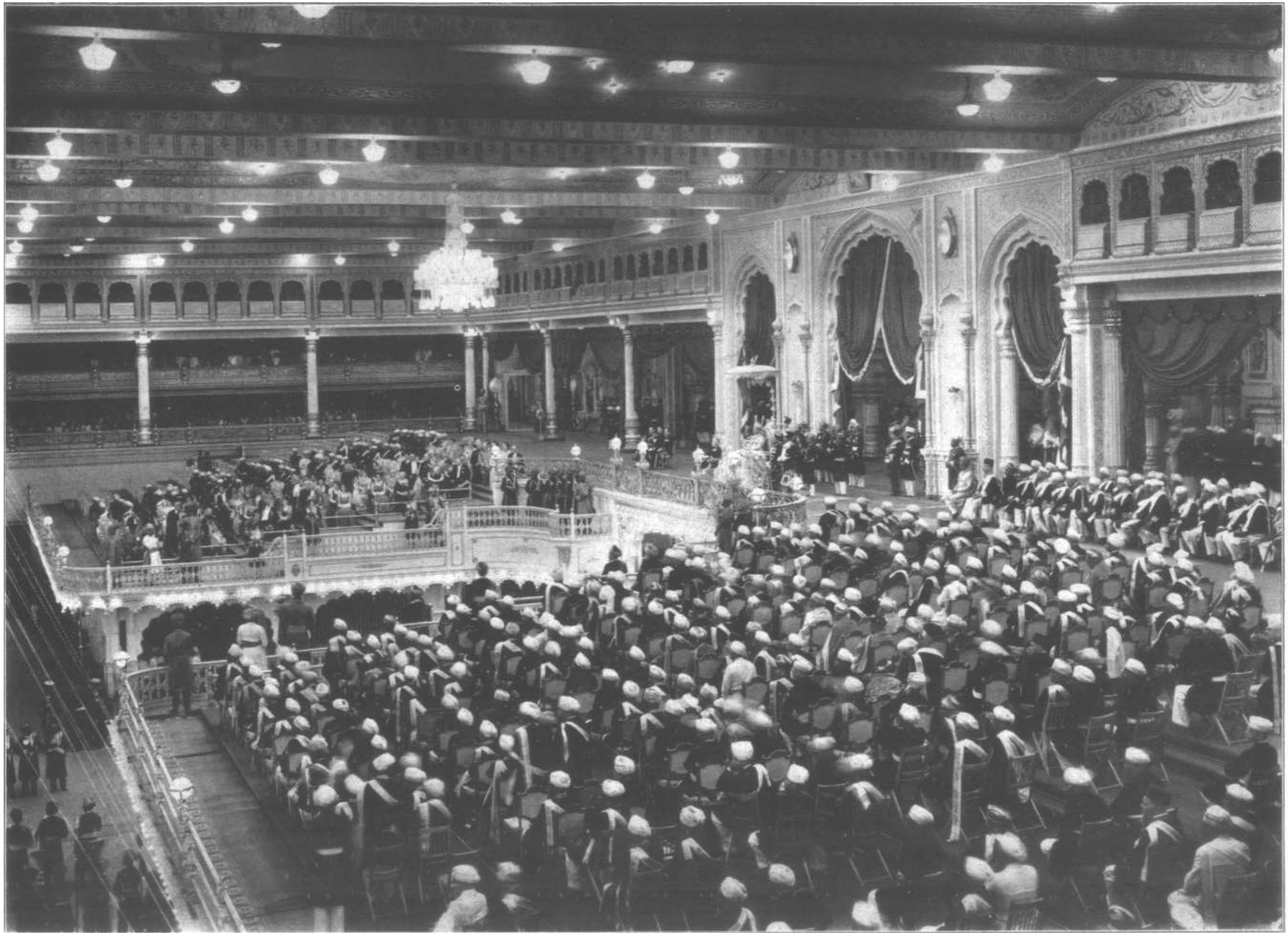
THE Central Industrial Workshop at Bangalore was started in the year 1897 by the Public Works Department as a repair workshop in connection with the Chamarajendra Water Works. In the year 1917 it was converted into an Industrial Workshop to manufacture and supply to the people simple machines needed by them, undertake important repairs and alterations of machinery already set up, and carry on experiments to design and adapt machinery to suit local requirements. Arrangement was also made to give practical training for artisan apprentices, as well as students who had undergone a theoretical course in the Engineering College or School. In the year 1927 the amalgamation of the Electrical and Military Workshops with the Central Industrial Workshop was sanctioned thus making the latter a central servicing workshop for the several Government Departments. Recently Government have ordered certain interchange of machinery and personnel between the Central Industrial Workshop and Government Electric Factory so as to make each of them more self-contained and avoid overlapping.

The Capital of the concern is at present Rs. 1,90,806-8-7 divided into Rs. 1,31,869-2-2 of fixed capital and Rs. 48,937-6-5 of working capital. There are at present 183 workmen on the roll, on daily rate of wages, the total wages per month paid coming to about Rs. 2,500.

At present the Workshop is in direct charge of the Industrial Engineer, Mr. A. V. Raghavachar, B.Sc. (Mysore), etc., in the Department of Industries and Commerce. Mr. B. G. Appadorai Mudaliar, B.A., B.Sc. (Tech.) (Manchester), etc., is the Director.

The major portion of the work done by the workshop is for the Government Departments and the Government aided industrial concerns. The Foundry section can execute castings both in iron and other special metals like phosphor bronze, gun metal, etc. Among other important works may be mentioned the "Wooden Oil Ghana," the "Hand Deep Well Pump," etc. These have special reference to the work of rural regeneration and uplift carried on by the Department of Industries and Commerce.

Schemes of extensions are on hand for the better organisation of the different sections of the workshop. Improved tooling and gauging methods have also been proposed so as to tackle confidently the present day needs of the Engineering industry. The experience gained in the workshop during repairs of old machinery would be very valuable and enable, in the future, to starting of manufacture in those lines requiring very high precision work.



PATTABISHEKAM DURBAR IN THE PALACE AT MYSORE.

INDUSTRIALISATION: THE WAY TO ECONOMIC PROSPERITY

Mysore on the line

By A. Padmanabha Iyer,

Author and Journalist, Author of "Modern Mysore".

I HAVE great pleasure in responding to the invitation of the Exhibition Committee "to contribute an article of topical interest pertaining to problems connected with Education, Agriculture, Industries and Commerce with special reference to the conditions prevailing in Mysore, and to the possibilities of development calculated to enhance the prosperity and happiness of the people," to the Exhibition Handbook of 1940. The art or science of Administration being essentially an industry of paramount interest and first-rate importance, it will not be inappropriate, I believe, to preface this article with a few words about this matter of topical interest.

It was exactly 60 years ago that the famous Rendition of Mysore took place. Though His Highness the late Maharaja Sri Chamarajendra Wadiyar, during the fourteen years of his prosperous rule, had cleared all doubts and misconceptions about the "Experiment", Lord Curzon, the great Pro-Consul, reminded His Highness the late Maharaja again of this "Experiment" when he invested His Highness with Ruling Powers in 1902. It will thus be seen that 38 years out of this long era of peace, prosperity and plenty, extending to 60 years, is covered by the glorious reign of His Highness Sir Sri Krishnarajendra Wadiyar Bahadur, which is universally acclaimed as the GOLDEN AGE in the history of Mysore. As I have had occasion to know Mysore and its affairs for more than 30 years of this happy rule, I hope that I can claim some knowledge to write about Modern Mysore. During this period, His Highness the late Maharaja had seven Dewans under him as his advisers to administor the State. Though they were men of different temperaments, diverse ways of thought and of an intellectual calibre each cast on its own mould, the thread that passed through this garland of Dewanship was in the wise hands of His Highness, so that the making of Mysore was planned and worked in the well-laid down principle of His Highness "I live for my people." This central principle became part and parcel of the Governmental agency to such an inviolable extent that the administrative machinery moved unerringly from the very commencement of His Highness' memorable reign. If I am permitted to point out the main trait in His Highness' character and dealings with the people, it was His Highness' partiality, nay, bias, for the villager and his wants. It is this distinguishing feature of His Highness that has secured for him an honoured place in every home, whether of the rich or the poor, in rural Mysore, or in the urban area. Nay, His Highness' name is holy word for worship everywhere. The level of his administration has risen so high that Empire statesmen had no hesitation to describe it as "a pattern for the world."

The early administrators of Mysore were themselves struck with the possibilities of industrial advancement and had taken steps to start industries of some kind or other. But the policy of industrialising the country with a view to enhance the economic prosperity of the people on a wide-spread scale was initiated at a later period. When, however, Sir Mirza Ismail assumed the Dewanship in 1926, he decided with one scoop of his wide vision that the urgent need of Mysore was to make the general masses of people happy and contented and make the State itself economically self-sufficient. To quote his own words, "the economic question stands first among all our questions; and it will continue to receive our constant and careful attention. To take the simplest, the most obvious and yet the most neglected of matters—the production and use of the necessities of life within the State. Home production, manufacture and use of the necessities of life, are the triple root of material prosperity, and the basis of all other forms of prosperity." The key-note of his work was expressed

by him in one simple sentence, namely, "I regard the office of Dewan less as an appointment than as a great mission of patriotic service."

If Hyderabad leads the other parts of India with its excellent system of vernacularisation of Education as examplified in its Osmania University, if Baroda has been recognised as a pioneer in social legislation, if Travancore stands in the front rank with its high percentage of literacy, if Cochin claims to be the first in the introduction of a Diarchichal form of Government, Mysore must be given the palm for the industrial outlook initiated and carried out with such remarkable results in its economic prosperity which has enabled the village raiyat and the artisan to make two blades of grass grow where one grow before. When every other administration was halting and hesitating in the matter of affording State aid to the advancement of industries, Sir Mirza Ismail took the bold step of offering Government help---a policy which has been applauded by other States and administrations. Even the Government of India has found the error of its ways and turned its attention to the line of action adopted by the Mysore Government. The pace of industrial advancement has, as a result of this original idea of Sir Mirza Ismail, greatly advanced during the past fourteen years of his Dewanship. The high economic level to which Mysore has been raised is now an ideal for other Governments to follow. It is best explained in his own words. Though the passage has become quite familiar to the public and has become even commonplace, it is worth quoting over so many times. "We are very proud," said Sir Mirza, "of the products of these factories, and, at the risk of being called provincial, try to set before all the Mysoreans the ideal that they should wash themselves with Mysore soap, dry themselves with Mysore towels, clothe themselves in Mysore silks, ride Mysore horses, eat the abundant Mysore food, drink Mysore coffee with Mysore sugar, build their homes with Mysore cement, Mysore timber and Mysore steel, furnish their houses with Mysore furniture and write their letters on Mysore paper." Can there be a better or a more profitable achievement than this of which any administrator may justly be proud? Mysore is adding to this long list every year. The management of these industrial concerns under the supervision of Government has become so complex and difficult that the creation of a new Office called Government Director of Industrial Concerns was rendered necessary. By the side of the active promotion of these industries, arrangements were also made for the well-regulated marketing of their products—both agricultural and industrial. The latest concerns are Mysore Glass and Enamel Works, Chrome Tannery at Bangalore, Match Factory at Shimoga, Paint and Varnishes Factory at Mysore, a Factory to manufacture Agricultural Implements, etc. At the end of last year there were 231 factories working in the State of which 44 were seasonal and the rest perennial. The average daily number of operatives employed was 26,089. The working of the various Governmental industrial concerns was satisfactory. The sales to the public at the Industrial and Testing Laboratory where ordinary drugs and medicines are manufactured increased by about 48 per cent. This institution has been largely responsible for reducing the import of medicines and drugs from the European market. Another forward step taken was to launch a third Bitumen emulsion factory at Hassan with a capital investment of Rs. 16,000. This is the third factory established in the State. This will amply illustrate the need for this stuff so much in demand for the surfacing of the road. Mysore has made it a local product.

The push given to the revival of old rural industries and starting of new ones has always remained a dominant feature of the Department. That the Government of Mysore are always vigilant and have their eyes on these industrial concerns is proved by the circumstance that frequent surveys are made of the working of the existing industries in all their aspects, which ensures additional guarantee of success. There were also conducted demonstrations of improved methods in respect of about a dozen industries. Hand-spinning which is the chief subsidiary industry of the raiyat received considerable attention through the ever expanding activities of the Badanval Centre and its four branches. An idea of the valuable work done by this organisation may be gauged from the fact that, whereas in 1927 when the centre was opened, there were only 1,000 spinners who produced 5,764 lbs. of yarn and 7,765 yards of "Khadi" valued at Rs. 3,741, in the year under review there were 5,045 spinners who produced 59,837 lbs. of yarn and 1,30,780 sq. yards of "Khadi" valued at Rs. 69,073. In addition, the three non-departmental centres produced "Khadi" valued at Rs. 26,000. The wool-spinning branch of

THE DURBAR HELD IN THE PALACE ON 29TH AUGUST 1940.

Kolar has done much to resuscitate the "Kambli" or blanket weaving industry in the Kolar District. An interesting feature of the hand-loom industry is the fillip given to it by the introduction of cheap electric power.

"There is no activity of Government," observed Sir Mirza in 1937, "to which I attach more importance than the measures undertaken to make rural reconstruction in the State an abiding industry." Closepet was the first village selected for rural reconstruction nearly six years ago. I had the pleasure of visiting this village in 1935 when the enthusiastic Sub-Divisional Officer, Mr. T. Rangaswami, was doing the pioneer work. Since then great progress has been made, so much so that Closepet has come to mean intensive rural welfare work, just as "Brindavan" has come to signify sweetness and light. This centre of welfare work has become so important that Their Excellencies the Viceroy and Lady Linlithgow visited the locality and were highly pleased with the excellent work turned out as well as with the Exhibition which had been arranged for them. How well the villagers are impressed with the new innovations introduced will be evident from the striking fact that 456 Panchayets are today using improved agricultural implements and a better variety of seed. Breeding bulls were maintained by 300 panchayets. That they have moved in other fields of rural activities will be seen from the circumstance that 70 village schools, 46 Muzrai institutions, 11 tanks, 62 topes and 137 village forests were under the management of the village panchayets. One hundred and sixty-two panchayets have laid out parks, 145 are maintaining fruit gardens and 815 have planted fruit and shade trees in their villages. Eight hundred and six panchayets are maintaining libraries or reading rooms. Such cottage industries as Apiary, Poultry, Sheep rearing, Village Smithy, Pottery, Sericulture, Forest Nursery and Co-operative work in various forms have taken a deep root in village soil in Mysore so that there are definite indications of a new life which would assuredly make for the prosperity and happiness of the masses of the peasant population in the whole State.

I have in this brief review of the work of industrialisation in Mysore given enough materials to show that the "Land of the Wadiyars" can proudly claim that it is "The Brightest Diadem in the Crown of Indian India." Additional testimony is provided by such an independent and high authority as Lord Samuel, who, when he was in India, had plenty of opportunities to be acquainted with the magnificent work done in Mysore, has put down his impressions in the following pregnant words:—"Mysore is indeed fortunate in His Highness, a very exceptional Ruler. He has a deep sense of the duties of a Prince to his people. His character is marked by a benevolence which is matched by his sagacity. Incidentally, his wisdom and his foresight has been shown in the appointment of Sir Mirza Ismail, as Dewan Saheb, undoubtedly, one of the ablest administrators to be found, not only in India but anywhere within the bounds of the British Commonwealth." The following facts may be mentioned to show how Mysore is able to maintain her acknowledged position as the Model State in India. The Gold Mines of Mysore produce almost the entire output of gold in India. In its sandalwood, the State is blessed, no doubt, with a treasure, but imagination and intelligence were required to make that treasure a fragrant and exclusive asset and so work it as to meet the entire need of the world. Like many parts of India—Indian as well as British—Mysore too has its river systems. But here again, it was the indigenous statesmanship that showed the way to the other parts of India that Hydro-Electric Power could be produced and that it could be made the handmaid of science to benefit mankind. Thus it was that the harnessing of the Cauvery Falls at Sivasamudram has become the first Hydro-Electric scheme in India. To take again, the Mysore Iron and Steel Works, it has to be stated that it was reserved again for Mysore brain to start this industry so early as to deserve the distinction of being one of the largest concerns of its kind in the British Empire with the additional merit that it contains the only charcoal furnace in the East. When it was threatened with utter extinction, it was the far-sighted wisdom, wide imagination, high statesmanship and sharp business instinct of Sir Mirza Ismail that saved it and made it a living source of profit. In the output of raw silk, Mysore leads India, and has also the only spun-silk factory in India. In the manner in which the Government of Mysore evolved a policy of encouraging the silk industry in the State, thousands of families in the villages whose hereditary occupation was silk-rearing were saved from the economic distress from which they were suffering—a distress which would have killed the

industry but for the timely help so generously given. The synthetic ammonia plant of Mysore Chemical and Fertilizers is the first in India. The Sugar Factory at Mandya is now recognised as the biggest Sugar Manufacturing Company in India. The Brindavan Gardens at Krishnarajasagar, compared to Versailles, has no equal in this country and has to be reckoned as one of the wonders of the world. Mysore has secured a unique place in the sphere of education in that it was the first State to deviate into a thoroughly useful system of Vocational and Technical Education and also in establishing a University of its own—the first in any Indian State. In medical relief, Mysore has earned from American visitors high encomiums. The last, if not the least, item of attraction is its Water Falls, the Jog Fall, the highest in the World. In the statue of Gomata at Sravanabelagola, 60 feet high, the State possesses the highest statue which is bigger than any known statue of Rameses in Egypt. Such is the Mysore of today. The high position which she has earned as a prosperous economic unit of administration in India and which she has been able to maintain is the richest harvest of leafage and fruitage among Indian India, entirely due to the unselfish labours of the wise and patriotic Dewan who said in one of his speeches that "it has been my good fortune to play a positive part, to plough my furrow in a fertile field, and my experience has led me to see rich and rare fruit on every side. I look for social and political reform not through the making of revolutions, but by the awakening of thought and by the progress of ideas. Peace and economic prosperity are closely linked together. Economic prosperity cannot develop unless there is peace and order in the country. For this purpose we need co-operation in all things and it seems to me that the most powerful instrument for achieving such a result is common industrial enterprise." Sir Mirza Ismail added with the foresight of a seer that "POLITICS DIVIDES PEOPLE BUT INDUSTRIAL ENTERPRISE UNITES THEM." Let these words be the watchword of every statesman and patriot in the discharge of his onerous task.

THE GOVERNMENT INDUSTRIAL AND TESTING LABORATORY.

THE Government Industrial and Testing Laboratory has been manufacturing a variety of medicinal products for the last nine years. These products include official preparations, as well as a number of specialities which are now well established all over southern India. I. T. L. products have been exhibited at the Mysore Dasara Exhibition for a number of years. Careful selection of raw materials, up-to-date equipment, expert supervision at every stage of manufacture by qualified chemists and rigid analytical control, ensure that every product sent out from the Laboratory is of the highest possible quality. It may also be mentioned that the Laboratory is working in close co-operation with the Mysore Medical Department and every endeavour is made to keep in touch with the latest advances in medicine. Only drugs whose therapeutic value is thoroughly established are used. Extensive clinical trials in the various State hospitals and by private practitioners in all parts of South India have given ample proof of the quality of I. T. L. products.

Among the products recently introduced by the Laboratory may be mentioned a number of fine chemicals, used in medicine such as iron and ammonium citrate, potassium citrate, and potassium acetate, Iteol, a powerful non-poisonous disinfectant and Reticulin a liquid extract of liver which has just been put on the market and has been considered by Doctors to compare favourably with the best imported preparations. A Testing Section where chemicals and other stores purchased by Government are analysed and certified and the facilities of which are open to other Government Departments and to the public, a Research Section engaged in the investigation of problems of economic importance and a plant for the manufacture of high grade sulphated oils used in the textile industries are other activities of the Laboratory.

Experiments are on hand for the manufacture of liver extract, ampoules for injection, glandular products, lactic acid and lactates from molasses (by fermentation), etc. Samples of all the products manufactured by the Laboratory or produced on an experimental scale will be found in the Stall.

Rajamantrapravina N. MADHAVA RAU, B.A., B.L.,
MEMBER OF COUNCIL.
CHAIRMAN, THE MYSORE DASARA EXHIBITION COMMITTEE,
1936—1938.

CONSTITUTIONAL REFORMS IN MYSORE.

By *Rajasabhabhushana Diwan Bahadur* K. R. Srinivasa Iyengar, M.A.

It has of late become usual for politicians of a certain class in British India to characterise the Indian States in general as being backward and tyrannically governed, with no security of either person or property for their subjects. Such sweeping generalisations do not take count of the fact that there are several hundreds of States in India conditions in which vary greatly from one another and that, while there may be States the administration of which rightly merit condemnation, there are others wherein the standard of administration compares most favourably in every respect with that of the best governed British Indian Provinces or even foreign countries. Mysore occupies a foremost place in the latter class. Mr. Kanhaya Lal Gauba who is no admirer of Indian States and who in his book "H. H. or the Pathology of Princes" published in 1930 makes a scathing attack on the Princes in general and their vagaries, speaks of Mysore as one of the exceptions to the general rule. To quote his words:

> The Mysore State has the enviable reputation of being the best administered of Indian States. In the opinion of Miss Yvonne Fitzroy, who was for many years closely connected with the Viceregal Court, the Maharajah is the only Prince who has granted a genuine constitution to his people, and his rule is extraordinarily enlightened and progressive. [And again he says:] In 1831 the administration of the State was taken over by the British Government. Fifty years later, in 1881, the State was restored to the old dynasty under conditions and stipulations laid down in the instrument of transfer. Since then, Mysore has made rapid strides both in the development of its natural resources and in representative institutions. In many quarters it is the opinion that, in some aspects, the administrations of Mysore and Travancore are ahead of British India. This book is however concerned with the rule rather than the exception. Mysore, Travancore and some others are exceptions.

Since these words were written about nine years ago, Mysore has made further strides forward in all directions, so much so that every distinguished visitor to the State including eminent Congress leaders and ministers of British Indian Provinces have borne testimony to the benevolent rule of H. H. the Maharajah, his great solicitude for the welfare and happiness of his people, and the remarkable progress made in recent years in the State in the development of industries, the expansion of irrigation, rural improvement and reconstruction—in fact, in all matters calculated to promote the economic well-being and prosperity of the people. Notwithstanding all these blessings, combined with absolute security of person and property, enjoyed by the people of the State under the strictly constitutional rule of His Highness, there has been for some time past an insistent demand from a section of them for a change in the constitution and for the introduction of a form of responsible government on the lines of that recently brought into effect in British India. In consequence of this demand and in view of the long time that has elapsed since the constitution was last revised in 1923, a committee of 26 persons (of whom 2 were officials and the rest were experienced non-officials representing all interests and communities in the State) was appointed by Government in April 1938; and on the recommendation of the Committee, several far-reaching reforms, as will be detailed below, have been sanctioned and announced by His Highness in November last to liberalise the constitution, associate the people more largely with the Government and enable the legislature to exercise more effective influence and control over the administration.

Before proceeding to deal with the Reforms now sanctioned by His Highness, it may be useful to give a short history of the existing constitution, as it has gradually developed from stage to stage. As mentioned already, the administration of the State was in the hands of the British Government for 50 years from 1831 to 1881, when it was restored to the Maharajah in the person of His Highness Sri Chamarajendra Wadiyar Bahadur. One of the first acts of His Highness on the rendition of the State to him was the establishment of the Representative Assembly, consisting of leading and representative landlords, merchants, etc., from all parts of the State with a view to making known to the people through them the measures adopted by Government for the administration of the State

and giving them an opportunity to express their views on such measures and also bring to the notice of Government their wants and grievances in all departments of the administration. The Assembly which used to meet once a year during the Dussarah season in the capital of the State was the first of its kind in India and its inauguration was hailed throughout the country as a very progressive and beneficial measure. The members of the Assembly were first nominated by Government; but, in course of time, the seats were all allowed to be filled by election, an additional session of the Assembly was held during the Maharajah's Birthday Session, the annual budgets of Government were placed before and explained to the Assembly and it was also given the privilege of being consulted on all measures of legislation and taxation proposed to be introduced by Government. This state of affairs continued till 1907 when the next step forward in the direction of constitutional development in the State was taken by the establishment in that year of the Legislative Council consisting of not more than 15 members (besides the Dewan and Members of the Executive Council) of whom not less than two-thirds were to be non-officials. The function of the Council under the Act of 1907 was strictly limited to legislation and it had no power of calling for information or passing resolutions regarding the administration and the conduct of the Executive. Though some amount of advance was made in respect of electoral and other privileges of both the Representative Assembly and the Legislative Council between the years 1907 and 1922, they were considered inadequate to meet the growing demands of the people and a mixed committee of officials and non-officials under the chairmanship of Dr. Sir Brajendranath Seal, the then Vice-Chancellor of the Mysore University, was appointed in 1922 to work out the details of a full, comprehensive and up-to-date scheme of constitutional reforms suitable to the conditions of the State. On the report of the Committee, the Representative Assembly and Legislative Council Acts of 1923 were enacted embodying the reforms sanctioned by His Highness and a proclamation was also issued by His Highness announcing the reforms. These acts are still in force and the present constitution is based on them.

According to the abovementioned Acts and the Rules issued thereunder as amended up-to-date, the strength of the Representative Assembly is fixed at a minimum of 250 and a maximum of 275 members. All the seats are to be filled by election, provided that, in respect of seats for which properly constituted electorates cannot be formed, they may be filled by nomination by Government. The members of the Assembly have the privilege of making representations to Government in respect of their wants and grievances relating to any department of the administration, asking for information by means of interpellations regarding the action of Goverment, passing resolutions on matters of public importance and discussing the State budget. The Assembly is also entitled and has the right to be consulted beforehand on every measure of legislation proposed to be undertaken by Government; but in cases of urgency when previous consultation with the Assembly may not be possible, it may be dispensed with. The Assembly thus serves at present as a popular body for the ventilation of the needs and grievances of the people in all spheres of Government and for the expression of public opinion on all matters of importance including legislation which are placed before them by Government or otherwise brought to their notice.

Turning next to the Legislative Council, its present strength is 53, (including the Dewan-President and the two Members of the Executive Council who are *ex-officio* Members thereof). Of these 23 are officials and 9 are nominated officials and the remaining 21 are elected non-officials who are thus in a considerable minority in the house. All legislative measures have to be placed before and passed by the Council and approved by the Maharaja. The members of the Council have the power of asking for information by means of interpellations and passing resolutions on matters relating to the actions of Government. The budget has to be placed by Government before the Council and all proposals for appropriation of Revenues under the several heads—(excepting a few excluded items such as those pertaining to the palace, military forces, pensions, &c.) are to be submitted to the House in the form of demands for grants. It will be open to the House to reject or reduce any demand; but the Government have power to incur the proposed expenditure notwithstanding its rejection or reduction by the Council, if they consider it necessary for discharging their responsibility or for carrying on the administration.

Rajamantrapravina K. V. ANANTARAMAN, B.A.,
MEMBER OF COUNCIL.
CHAIRMAN, THE MYSORE DASARA EXHIBITION COMMITTEE, 1940.

The Executive administration of the State is conducted, subject to the control of the Maharajah, by a Dewan and two or more Members of Council (the present number is two) who may be appointed by His Highness either from officials or non-officials entirely at his pleasure and discretion. In practice, however, no non-official has been appointed to the Executive Council during the past 40 years and more; and the Members of Council have been appointed from among officials alone. The several departments of administration are distributed among the Dewan and Members of Council and each of them disposes of all ordinary matters relating to his portfolio. All important matters, however, of which a schedule or list approved by His Highness is maintained have to be placed before the entire Council including the Dewan and submitted with their opinion, whether it is unanimous or divided, for the orders of His Highness. The 'scheduled' subjects include such matters as imposition of new or abolition of existing taxes, proposed measures of legislation, annual budgets and appropriation of revenues, appointment of all officers of and above certain grades, remissions of judicial sentences, memorials for mercy from persons condemned to death, material revision of establishment of any department, all estimates for works costing above a prescribed minimum amount, &c. In respect of all these matters which have to be submitted by the Dewan to His Highness with the opinion of the Council, it will be open to His Highness to accept their opinion or pass such other order as he may consider proper. As a constitutional ruler, His Highness is generally guided by the advice of his Council, though on occasions which are very rare, he has had to differ from their recommendations, in the discharge of his responsibility for the administration and for the welfare of his subjects.

II

Coming to the Reforms which have now been sanctioned on the report of the Constitutional Reforms Committee and announced by His Highness the Maharajah, the most important ones are those relating to the constitution of the Legislative Council and the Executive Council. Whereas the Legislative Council now consists, as already mentioned, of 53 members of whom only 21 are elected and the remaining 32 are nominated officials, or non-officials, the reformed Council will have a strength of 68 members of whom 44 will be elected (24 by general territorial constituencies, 10 by minority communities, such as Mahommadans, Depressed Classes, Indian Christians and Europeans, and 10 by special interests such as University, Trade and Commerce, Planting, Labour, etc.) and only 24 will be nominated by Government, of whom *not more than 16* can be officials including the ministers, all of whom will be *ex-officio* members of the Council. The elected members who will be in a preponderating majority of about two-thirds will thus be in a position to effectively influence the decisions of the Council and the actions and policies of the Government. It may be observed that the Government have taken note of the recommendation of the Committee that though provision is made at present for the nomination of 24 members, this number should not be treated as fixed but should be considered as the maximum which should not be exceeded. It is hoped that it will be the policy of Government to gradually reduce the number and in course of time bring it down as low as possible, if not to dispense with nomination altogether.

Another important change will be that while at present the Dewan is the *ex-officio* President of the Legislative Council, the new reformed Council will be given the privilege of electing its own President and also a Deputy President from among its *non-official* members. For the first term, however, the President will be nominated by His Highness the Maharajah, as was done in the British Indian Provinces. The Dewan will not be a member of the Council but will have the right to attend meetings of the Council and address it whenever he wishes to do so. The elected non-official President as also the Vice-President will be removable on a vote of no-confidence passed by a two-thirds majority of the Council. Their emoluments will be fixed by the Council itself subject to the approval of His Highness. Mysore will thus be the first Indian State to have the privilege of having an elected non-official President for its Legislative Council and also an elected non-official Deputy President.

I have already referred to the power now possessed by the Legislative Council to discuss the budget and vote on the demands for grants for the several departments of Government. It may be noted here that, while in most Indian States in which the budget is placed before the Legislative

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Council only discussion of the budget is allowed but no voting thereon and that, even in the few States like Travancore and Cochin wherein voting is allowed, it does not extend to the salaries of officers of and above a certain grade such as Tahsildar, District Munsiff, etc., in Mysore every item of demand comprised in the budget and the salary of every officer however high including the Dewan—is subject to the vote of the Council, so that in this respect the Mysore Legislative Council enjoys a higher privilege than that of any other Indian State. At present, however, though every demand for grant is subject to the vote of the Council, Government have power, in relation to any demand rejected or reduced by the Council, to act as if it had been assented to, notwithstanding such rejection or reduction, if they consider the expenditure necessary for the carrying on of any department or for the discharge of their responsibility. Though, in the absence of full Responsible Government, the retention of such power in the hands of Government is essential for carrying on the administration, it will, under the new constitution, be exercised only on a formal certificate made by the Dewan about the necessity for the restoration of the demand. It is expected that such certificate will be made by the Dewan only if absolutely necessitated by circumstances and even then only with the approval of His Highness and after submitting to him the resolution of the Council, so as to enable him to give due consideration to the grounds on which the demand was rejected or reduced by the Council and have suitable action to redress any grievances or remove any defects in the administration brought to notice by the Council.

Another vital change—and one of far-reaching importance which will be made under the new constitution is in respect of the appointment of the Ministers, by which name the present members of the Executive Council will also be called hereafter. While there are at present only two members of the Executive Council, both of whom are members of the Civil Service, the Executive Council will hereafter consist of the Dewan and *not less than* four Ministers of whom *two at least* are to be selected from among the *elected* members of either the Representative Assembly or the Legislative Council. The selection and appointment of the Ministers will be at the pleasure of His Highness the Maharajah. It may be presumed that His Highness will choose for his Ministers only persons who, besides possessing his confidence by reason of their character, capacity and experience, may also be expected to command the esteem and confidence of the public at large and that while he will be under no obligation to choose the leader or any other member of the majority party in the Council or the Assembly, he will in the ordinary course do so, if suitable persons can be found in the party, due consideration being given at the same time to the claims of the representatives of minority communities and of special interests in both the houses. It may also be observed that to restrict the selection of the Ministers to the leader and members of any one party will necessarily lead to party government which, in the opinion of many eminent men including some ex-Presidents of the Indian National Congress, is unsuited to the conditions of British India and is all the more so to Indian States as it will militate against the responsibility of the Ruler for the good government of the State by forcing him to choose as his Ministers persons whom he may not consider quite fit for the place and in whom he cannot therefore repose full confidence.

The appointment of Dewan will be entirely at the pleasure of His Highness. He may be appointed from among officials or non-officials. While he will be the channel of official communication between His Highness and the Ministers, he will have no power to overrule the Ministers in any matter and any differences of opinion between him and the Ministers as also between the Ministers among themselves will be submitted by him for the orders of His Highness.

The new constitution does not contemplate a system of dyarchy, with its division of Reserve and Transferred subjects and a certain amount of disparity between the status and powers of the respective Ministers. All the Ministers under the reformed constitution will have equal pay, status and power and the several departments of administration will be distributed among them, no Minister being under a disability to hold charge of any portfolio on the ground of his having been appointed from among non-officials.

Doubts have been expressed in certain quarters about the successful working of a cabinet consisting of both official and non-official Ministers. Considering that, unlike in British India, there is no conflict of interests between the rulers and the ruled in Indian States, there is no reason why a combination of official and non-official Ministers

therein should prove unsuccessful. The official Ministers with their varied administrative experience and knowledge of the working of the several departments, and the non-official Ministers with their intimate acquaintance with the people and their demands, wants and grievances may well be expected to pool their knowledge and experience and work together harmoniously for the good of the State, under the guidance of the Maharajah, who will act as arbiter when there is any difference of opinion between them on important matters of policy or otherwise. Further under the new constitution, as only the minimum number of non-official ministers will be fixed as 2 and no limit placed on the maximum, it will be open to His Highness to reduce the number of the official Ministers or even to do away with them altogether and select all his Ministers from among the non-official members of the Legislature if he considers it necessary or desirable to do so at any time.

The term of office of the non-official Ministers appointed from the elected members of the Representative Assembly and the Legislative Council will be co-extensive with the terms of these bodies, which are fixed at 4 years as against 3 at present, while the official Ministers will hold office during the pleasure of His Highness, subject to retirement on superannuation in accordance with the Mysore Service Regulations. The Ministers—whether official or non-official—will not be removable from office automatically on a vote of no-confidence passed against them by the Legislature. There will, in fact, be no provision in the constitution for bringing forward a vote of no-confidence as such against the Ministers, either individually or as a body. The provisions embodied in the constitution for discussion of the Budget, for the rejection of demands for grants, for cut motion on the demands and for passing resolutions on the actions and policies of Government in all departments of administration will provide quite sufficient opportunities to the Legislature for bringing to the knowledge of His Highness any deficiencies or defects in the administration and for giving expression to its dissatisfaction or disapprobation of any measure or policy of Government and it will be left to His Highness, who will be kept informed of all such discussions of the Council, to pass such orders as he may consider suitable according to the circumstances of such case—to direct the Ministers to remedy the deficiencies, defects or grievances brought to his notice, to call on them to change their policies in accordance with the view of the Legislature or to remove any of the Ministers or appoint others in their stead if the adoption of such a drastic step is necessitated in public interests.

Turning next to the Representative Assembly, though a few advanced politicians in the State consider that it has outlived its original object and is no longer necessary under modern conditions, the general public opinion is strongly against its abolition on the ground that it has served, and continues to serve, a most useful purpose as it enables its members who are elected representatives of people drawn from all parts of the State including the most distant Taluks to personally meet the members of Government at least twice a year, give expression to their wants and grievances as also the defects and short-comings observed by them in any department of administration and to voice the opinion of the people at large on all measures of legislation and taxation and all other matters of importance under the consideration of Government. In accordance, therefore, with the popular desire, the Assembly will be continued in its present form and character but its strength will be slightly increased and it will be given certain additional rights and privileges as detailed below :

(1) The maximum strength of the Assembly which is now fixed at 275 will be increased to 310, mainly by increasing the number of seats reserved for Mahommadans from 18 to 30 and for depressed classes from 6 to 30, and reserving 11 seats for women as against only 4 at present. Of the 310 seats, 300 will be filled by election and 10 by nomination by Government of persons with expert knowledge or special experience whose presence in the Assembly would be useful and add weight to it.

(2) At present the Assembly need not be consulted beforehand and its opinion ascertained in respect of *urgent* measure of legislation proposed to be undertaken by Government. This will be abrogated and it will be made obligatory for Government before introducing any bill in the Legislative Council, however urgent, to first place it before the Assembly and obtain its opinion thereon, emergent situations being met by Government by the passing of temporary ordinances which will be in force for 6 months ordinarily and for one year in exceptional cases in which it may not be possible for the bill to be placed before the Representative Assembly and then got passed by the Legislative Council within 6 months.

(3) At present the opinion of the Assembly on any bill placed before it is not binding on, and may be ignored by, Government. In future when the principles or provisions of any bill placed before the Representative Assembly are opposed or amended by a 2/3rds majority of the Assembly, its verdict must be accepted by Government. In exceptional cases, however, wherein the Government consider it necessary to proceed with the bill in the Legislative Council in public interests or for ensuring safety and good Government notwithstanding the opposition of Assembly, they may do so; but before they do it, they should issue a statement giving reasons for their decision and send a copy of it to all the members of the Assembly and the Council.

(4) The existing restriction against members of the Representative Assembly bringing forward bills before the Assembly will be removed, and any member of the Assembly will be allowed to place a bill before the Assembly for its consideration, after obtaining the permission of the President which will be generally given except where the discussion of the bill is likely to be detrimental to public interests.

(5) The restriction now placed on the total number of interpellations, representations and resolutions that can be brought forward at any session of the Assembly will be done away with and as a consequence the duration of both the Dassarah and Birthday sessions will be somewhat extended.

(6) The franchise for the Assembly will be extended by reducing the minimum land revenue payable by a voter from Rs. 25 to Rs. 15 and also substantially lowering the educational qualifications of voters who do not possess the prescribed property qualification. A lower qualification will be prescribed for voters of the depressed classes than for others so as to give the same percentage of voting strength to the community. As a result of these measures the number of voters will be immediately doubled. Though the Government are against a further enlargement of the electorate immediately and at a bound on account of the practical difficulties in its working, it is hoped that they will go on steadily and gradually extending the franchise further from time to time, with a view to the attainment of the goal of adult universal suffrage at no distant date.

(7) The members of the Representative Assembly as well as the Legislative Council will be given the same freedom of speech as is enjoyed by the members of the British Indian Legislatures under the Government of India Act, and they will also be exempted from arrest under civil process during the sitting of the houses.

The vexed question of joint *vs.* separate electorates for the minority communities was fully discussed and considered by the Committee on Constitutional Reforms. The 3 Mahommadan members on the Committee who reflected the opinion of the members of their community in the State stood out for separate electorates as in British India and were thoroughly opposed to any form of joint electorate. The majority of the other members of the Committee, while feeling that communal electorates would practically break up that close unity of interests between Hindus and Muslims which has been a happy characterstic of the relations between the two communities in Mysore and would retard the growth of a sense of common citizenship and therefore stongly favouring the adoption of at least some form of joint electorate as a compromise, did not wish to have it forced on the community if it was unacceptable to it and therefore suggested that the matter may be left to the choice of the community itself. The Government who agreed with the views of the Committee consulted the leaders of the Muslim community and as they found that the community was uncompromising in its opposition to joint electorate in any form, they considered it desirable to accede to the wishes of the community and have accordingly sanctioned the adoption of the system of separate electorates for the community for the time being in the hope that "the system will not retard the growth of a sense of common citizenship and that it may be possible at no distant date to adopt a qualified system of joint electorates, if not of entirely common electorate." The same system has been sanctioned by Government for the Indian Christian community also for similar reasons.

With regard to the seats reserved for depressed classes, their representative on the Committee urged at first for separate electorates, but ultimately a compromise was arrived at and a system of joint electorates decided on, which has been approved by Government, according to which the successful candidate, in addition to his getting a prescribed percentage of his own community's votes, should also obtain a certain small percentage of the non-communal votes polled.

III

In view of the cry raised in certain quartes for the introduction of 'full responsible government' in the State, the question was most carefully considered by the Committee on Constitutional Reforms. It was found that many of the people who had raised the cry did not quite understand the implication of the term. 'Full responsible government' in the sense that the responsibility for the administration should be left entirely in the hands of Ministers chosen from the majority party in the Legislature, the ruler being obliged to ratify and put his signature to anything placed by them before him, thereby reducing himself, in the words of Mr. Bernard Shaw, to the position of a 'rubber stamp', is, in the opinion of the Committee, quite opposed to the conception of kingship in India and is also quite inapplicable to Indian States, the rulers of which have no independent sovereign powers and are bound by the terms of their treaties with the Paramount Power. It is further not wanted by anyone in the Mysore State, excepting a few persons among the extreme Congressites; and most of them have qualified the term 'full responsible government' with the words 'under the *aegis* of the ruler.' Unless the addition of these qualifying words is intended to be a mere verbiage and camouflage with no real significance attached to them, they can only be interpreted as meaning that the responsibility of the Ministers for the

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1892
CHAMARAJENDRA
TECHNICAL INSTITUTE MYSORE

administration must be subject to the control and supervision of the ruler and his responsibility for the good government of the State. The Committee on Constitutional Reforms after a thorough discussion and examination of the question in all its aspects, have recorded it as their opinion that though it may not be practicable in the present condition of the State and its people to introduce responsible government at once,

"the goal to be kept in view in all constitutional reforms in the State should be the attainment of a system of responsible government *under the authority and protection of the sovereign*: i.e., a system in which the administration is carried on by a cabinet of ministers appointed by His Highness the Maharajah and enjoying his confidence and also the support of the Legislature, the power of His Highness to ensure peace, order and good government and to safeguard the interests of all classes of his subjects including the minorities and to satisfy the terms of the treaty with the British Government remaining unaffected and supreme in all circumstances, and the stages of progess towards the goal being determined by His Highness according to the measure of success attending each stage."

Though the government have expressed their inability to make a formal declaration of the goal as recommended by the Committee, it will be seen from the account given above of the reforms now sanctioned by them, that they are all, as a matter of fact, directed towards the goal as envisaged by the Committee and that they amount to a substantial advance in the direction of such goal.

SRI CHAMARAJENDRA TECHNICAL INSTITUTE

By S. Ramaswamy

Superintendent, Chamarajendra Technical Institute.

Is the Chamarajendra Technical Institute an Arts School like the School of Arts, Bombay, or is it an Arts and Crafts School like the one at Lucknow or is it a Trade School like the Railway Technical Institute of Lahore or is it a Cottage Industries Institute like the one at Hyderabad or can it be a Sales Emporium like the Victoria Technical Institute at Madras or is it a Workshop like the Central Industrial Workshop in Bangalore or shall we say that it is a Museum like the Industrial Museum of Poona?

These are the several questions that an outsider would naturally ask when he enters the Institute but, to his agreeable surprise, he sees, on going round the several sections, that the Chamarajendra Technical Institute is at once an Arts School, an Arts and Crafts School, a Trade School, a Cottage Industries Institute, a Sales Emporium, a Workshop and a Museum, all combined in one organization, each branch functioning properly and scientifically and giving the Institute an all-round character.

The real credit for finding this Institute goes to His Highness the late Maharaja Sri Chamaraja Wadiyar Bahadur of revered memory. He planted this wonderful tree in 1892 and it was carefully nurtured by our late illustrious *Rajarishi* His Highness Sri Krishnaraja Wadiyar IV. It began to blossom in the natural course of events and is now bearing exquisite fruits. Under the watchful care of Sir Mirza Ismail, our beloved Dewan, this delightful tree is growing into prominence, affording shelter to many an individual.

Amongst the several branches of the Institute we find the following:—Arts Section, 55 boys; Crafts Section, 70 boys; Trade Section, 270 boys; Workshop, 200 workmen; Output Rs. 90,000 per annum; Sales Rs. 100,000 per annum and Stock Rs. 200,000.

May this happy tree grow into greater usefulness under the sacred blessings of His Highness the Maharaja Sri Jaya Chamaraja Wadiyar Bahadur!

RAPID PROGRESS IN AN INDIAN CITY? WHY NOT?

By P. S. Wright, B.A. (Oxon.)

Warden, University Settlement, Bangalore.

Xnagar is a typical Indian city, and yet it is no city in particular. Let us pay three visits to this city, let us say for the sake of convenience in 1940, 1941 and 1950. We shall visit the workers' district and we shall take especial interest in the social progress made during this ten-year period.

1940. We arrive at Xnagar Station and are met by our doctor friend. After spending the night at his home, he offers to take us to the homes of the mill workers. We catch a bus from the market and after a ten minutes' journey we get out near a big mill. We walk along an arterial road with the mill on one side and some miscellaneous shops on the other. The road is meant to be tarred, but it is so chopped up by the numerous bullock carts moving along it and is so covered with filth, animal droppings, waste paper and refuse from the shops that it is hard to recognise a road at all. A gust of wind fills our nostrils with dust and noisome odours. The street is crowded with traffic, cycles and bullock carts, tongas and people, and occasional buses and cars; there is no footpath and no traffic control and in our efforts to dodge a cycle or tonga we often narrowly escape falling into a roadside drain, down which is running all the filth of the neighbourhood. We turn down a side street and find the homes of many of the workers.

These dwellings—they certainly cannot be dignified by the name of houses—are built for the most part by the occupants themselves and consist of a mud floor about eight feet square, four mud walls and a roof consisting chiefly of scrap metal from old kerosene tins. There is, of course, no lighting inside these dwellings, nor is there any water nor sanitary arrangements. There are occasional street lights outside, and at the end of each street there may be a public tap and a public convenience. But the end of the street is some way off and there is always a crowd there, so nobody visits it unless it is absolutely necessary, and in consequence from the point of view of cleanliness both the streets and the inhabitants leave a great deal to be desired. Health is poor and there are frequent outbreaks of cholera, small-pox and plague. The tiny hovels lining the road are overflowing with people and we learn that in many cases as many as ten people are sharing a hut.

We stop and speak to one young fellow. We ask him how people manage to live in such conditions, why Government does not do something to help them and whether the slum dwellers themselves are not doing something about it. He answers that he had not thought of living in any other way, asks why Government should help the poor, no Government does anyway, and admits that one or two young people joined the local trades' union and have been agitating for better conditions, but so far they do not seem to have achieved much and now many of their friends are laughing at them. We leave the place with a feeling of despair and hopelessness. These people seem to be incapable of helping themselves and have no faith that Government or any other organisation will help them.

On our way back we pass some model houses built by one of the mills; here conditions are very much better, the people are clean and look much happier, their wages are no larger than those of the slum dwellers, yet they seem to be getting far more joy out of life. Between the two sets of dwellings is a toddy shop, crowded with people from the slums, but hardly anybody from the model houses is there. We ask a police constable why and are told that a slum hut is a miserable place for any man to spend an evening, with no room to turn round and dirty noisy children crawling about the floor. The model houses, on the other hand, are larger and pleasant and are excellent places to chat with one's friends, and there is room for all the family as well. The toddy shop is, for the slum dweller, a refuge from an unkind world; here he can drink a liquor which will enable him to forget all his sorrows, and if he runs short of money, why then there is always an obliging moneylender available. But the model house

dweller is quite content with his own home, there is plenty of light and air, no leaks in the roof, an adequate water-supply and a sufficiency of well-placed public conveniences, and as a result the people and the streets are clean and the house wives take a pride in keeping their houses clean also.

That evening we discuss the problem of the slums with our doctor friend until late in the night. The doctor considers that it is deplorable that so many men and women should be making political speeches and boasting of their patriotism and their devotion to the cause of the workers, and yet should be doing nothing practical to improve the conditions of our less fortunate fellow countrymen.

1941. We are back again in the city for another short visit. The doctor asks us to go with him and see the slums again, and informs us that there are now a few people, including himself, who are making an effort to improve conditions in that particular area.

We go; we are met by a young student who informs us that a keen group of social workers, many of them students from the University, have come together and have selected this slum quarter as the site for a determined attack on poverty, ignorance and disease. We ask to see what has already been done and are gently reminded that the work has been going on for less than a year, and it has taken all that time to make friends with the slum dwellers and win their confidence, that in fact the real offensive has barely begun. He tells us that the work has come in for much criticism, much of which is useful and acceptable, but that every critic is asked to come himself and join in the work before making further criticisms. We ask what support the work is receiving and are told that Government is helping with a small grant, and that a few well-to-do citizens are also giving financial assistance and that a large number of students and several citizens are giving liberally of their time and energy. We ask what type of work is being started now, and are told that a small dispensary has just been opened, that a number of literacy and continuation classes are being established, in order to free the workers from the toils of those who would exploit their ignorance, and to enable them to become responsible citizens. Health and diet talks are being given and the Xnagar Social Service League is able to give the municipal authorities useful information about conditions in the slums. We gather too, that the social service workers have learnt a very great deal from their contact with the poor, that many of them have made great friends amongst the slum dwellers, and that all of them feel that they are themselves leading fuller and happier lives. We take a look round, the whole place looks much the same as it did a year previously, perhaps a little cleaner. We talk to some of the mill workers about this new work. They are, most of them interested, some think these social workers a bit mad, but quite harmless, others think that they may possibly be able to do something to help while others again are frankly hostile feeling that only trouble can come out of it all. Our young student guide talks hopefully about the future and of organising producers' and consumers' co-operative societies, of linking up the co-operatives of town and country, of slum clearance schemes and model houses, of working men's and even women's clubs, and of all kinds of other reforms. Youthful enthusiasm? Wishful thinking? Perhaps. Yet London and other western cities have done as much, and if they can do that, then so can an Indian city. All the same we leave with the feeling that it will be a very long time before such reforms can be really got going.

1950. Here we are back again in Xnagar after nine years. The doctor who is an active member of the Social Service League, insists on taking us again to the slums. We go by the same road as we did before in 1940, a much cleaner road, but that is to be expected after a lapse of ten years. By the mill new shops have sprung up and we see that several of them are owned by the Xnagar Co-operative Society which appears to be selling a large variety of very attractive goods, the street is clean, there is a good foot-path, the drains are no longer visible and even the traffic seems to be well regulated. We turn down the side street. Here an amazing change meets the eye. Instead of rows of insanitary hovels on each side of a filthy lane, we see a well kept road lined by attractive workers' cottages. We stop at one cottage and a clean bright lad comes out and talks to us. He tells us that his family has a well ventilated clean little house, that there is plenty of water in the street for everybody and that there is no difficulty about sanitation. We ask him who is responsible for all the changes and he tells us it is the Social Service League. He is not quite sure whether the cottages were built by the League or by the municipality, but he is sure that if it did not build them itself the League was at any rate partly responsible for getting them built. He tells

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us that he is a member of the Youths' Club and Sports' League which was started by the Social Service League, and offers to take us to the League's headquarters.

We go down another clean and attractive side street, and come to a group of buildings set back a little from the road. In front is a small playground swarming with happy noisy children. We go into one of the buildings and our young friend proudly shews us round his 'club',—a pleasant building with several rooms, equipped with indoor games, a meeting room and a reading room. He shows us round the other buildings too. There are a dispensary and infant welfare centre, a cottage where a trained midwife resides—a creche and a nursery school. There are a fine library and reading room and class rooms for night classes, where a very large variety of subjects are taught, ('I am learning Marathi and music', our young friend told us); there is even a primary school in the compound, though this has now been taken over by the municipality. There is the office of the big co-operative organisation which is the central office for a large number of producers' and consumers' co-perative societies. Then there is the workshop block where youths are taught a few useful crafts such as carpentry and cobbling and weaving. There is a communal kitchen where some of the women of the locality, who have formed themselves into a 'cooks' co-op.' produce a number of delicious foods which are later sold in the city's co-operative stores. There is a fine restaurant, a grand place to spend an evening with friends, unless of course one prefers to go to the League Theatre. Incidentally we hear that the old toddy shop, unable to compete with the new restaurant, which, although it sells no toddy, provides very good company and wholesome food and drinks, has been forced to close down.

We go along again in the evening and find hundreds of people enjoying themselves; University students and mill workers are playing together on the small playing field behind the League buildings; the various clubs men's and women's, boys' and girls', are crowded with happy people. One elderly man tells us that he feels their lives are really worth living now, and thanks to the co-operative societies their money goes further, and the training his sons have had in the carpentry and cobbling workshops enables them to earn a bigger income than before.

One of the social workers tells us that there is still an enormous amount of work to be done. He is anxious to get a co-operative dairy farm started in the country to ensure a pure supply of milk to the workers, and he talks of starting a waifs' and strays' colony, a kind of Dr. Barnado's in the country. He tells us the League is getting an increasing amount of support from both Government and from the general public as the value of its work becomes more and more evident. We leave the place late at night, after a most enjoyable evening, with the feeling that a miracle has been accomplished.

Is it a miracle or is all this really possible? The University Settlement, started in Bangalore just a year ago, believes that it is possible, and will work hard to make Bangalore as much like Xnagar in 1950 as possible. We feel that we start with great advantages. Bangalore is certainly already far ahead of the Xnagar of 1940 and our social service organisation, the Settlement, (and many other social service organisations too) has already begun work, and moreover it has the full support of the Government and of many University students. But it has yet to win over the general public to support and to co-operate.

MYSORE UNIVERSITY LIBRARY

THIS Library contains 31,378 (upto 1st June 1940), including standard works on Philosophy and Religion, Economics and Political Science, Literature and History, British Parliamentary Publications and Official Reports.

In February 1923, it was included in the list of Depository Libraries of the Carnegie Endowment of International Peace and several valuable publications issued by the Endowment have been received in the Library and made accessible to all applicants. The Library receives 130 Periodical Publications and contains complete sets of important Journals.

MEKEDAT---A BEAUTY SPOT.

By G. Rudrappa, M.A. (Oxon.), Bar-at-law.

Mysore is well known to tourists in India as a State of many natural beauty spots. My object in writing this is to bring to the notice of the general public and ardent lovers of nature a spot, perhaps not so well known as it deserves. I am referring to a place commonly known as Mekedat near Sangama, the confluence of the Arkavathi and the Cauvery in the Kankanhalli Taluk in the Bangalore District. It is so called because it would appear that a goat could jump, at one time from one side of the hill to the other, between which the river flows. Now of course, owing to the erosive action of flowing water, the passage is very much widened.

The place called Sangama is about nine miles from Satanur, Hobli Headquarters, and can be reached both from Kankanhalli and Chennapatna on the Bangalore-Mysore Road. Visitors may conveniently halt at Closepet on the Bangalore-Mysore Road, where there is a travellers' bungalow and proceed to Satanur either *via* Chennapatna or Kankanhalli. Perhaps the journey through Chennapatna is better for motorists, as the road is tarred up to Chennapatna. Taking the Chennapatna route, we passed through a picturesque landscape of hills and dales and of ups and downs, and some part of the road, as we approach Sangama, resembles the ghat roads near the Jog Falls in Shimoga, although not so precipitous, and the jungle not so thick and perennial as in Shimoga.

There is a third class travellers' bungalow at Sangama built on a commanding and elevated spot on the bank of the Cauvery close to the Sangameswara Temple, the presiding deity of the place. The travellers' bungalow faces the Cauvery as it flows onwards after its confluence with the Arkavati between two rocky hills full of vegetation.

As you stand in front of the travellers' bungalow, you will see the Arkavathi approaching from the left side and joining the Cauvery which flows onwards between the two hills, already mentioned. These two hills and the river form the natural boundary between the Mysore State and the British territory. After uniting with the Arkavathi, the Cauvery marches onwards between the two hills, which approach nearer and nearer until they meet at a narrow point as it were. It is at this point, three or four miles from the bungalow, that we witness the marvellous works of nature carried on unceasingly, day and night, since the birth of the Cauvery. The river debouches here in a fantastic manner and then gently falls perpendicularly over a depth of about 30 feet and then flows evenly between the hills.

It may not be an exaggeration to say that the Cauvery is in existence from the beginning of this world and coeval with the Sun and the Moon and the Stars. Perhaps geologists may give the age of rocks and mountains by observing their structure and their state of disintegration. But it may not be quite so easy to say, when exactly oceans and rivers were first formed. However, here one sees the river by ceaseless action from age to age carving out for itself out of solid rock, a cauldron, as it were, for a length of over one mile for its channel.

At this narrow point, the junction of two hills, the river gathers volume and force and flows with impatience and fury. The water as it falls strikes against obstructive rocks; there is a fall of water at this spot not more than six feet in height, and yet a terrific din is heard and froth and fume are seen as you watch. The phenomenon is simple. The water which is gathered here on account of the narrowness of the passage strikes with great force against other rocks which obstruct its flow and in so striking re-bounds and is thrown back, and a circular motion of water sets in, and its gyration produces, along with probably small stones and pebbles and even sand, geometrical, circular hollows in solid rock in two or three places at the spot.

This is what is really interesting to lovers of Nature and Nature's work.

These circular hollows or cylinders made in the rock are nearly twenty feet in height and about three to four feet in diameter. There is also another charming hollow carved by the river striking against

the opposite rock about one foot below its surface, leaving an over-hanging top over a length of nearly ten feet, affording a comfortable roof, as it were, to those that would like to sit underneath and contemplate God, alone in the midst of such pure natural surroundings uncontaminated by man. To reach this place one has to descend for some depth and has to go on all fours at times.

There are also at the spot other attractions which are equally interesting.

Although it is only three miles from the travellers' bungalow, this place is in utter solitude and the sand that you find here is so pure, white and fine that you cannot but love it.

Tourists are advised to visit this place in summer when the flow in the river is less—say in the month of March—to see this grand work of nature. It is better to reach the place in the evening, stop in the bungalow for the night and start early the next morning. Cross the Arkavathi and pass along the base of the hill to your left. You will find your walk very enjoyable. As you look at the top of the sloping hill from the base, the Sun will be just rising on the other side of the hill and will not be visible to you, but the tender glistening leaves of the trees among boulders in the inclined or slanting side of the hill shining against the Sun on the other side adorn the side of the hill and produce an enchanting effect on the mind of the beholder. You walk in the midst of such grandeur to reach Mekedat in about an hour's time.

It is desirable to be at Sangama on a bright moonlit night. The peace and serenity at this place at 11 or 12 o'clock on such nights are worth experiencing. It has ideal attractions also for the pious and the contemplative.

The idol of Ishwara is sitting here at the Sangama watching, as it were, the everlasting stream of life or humanity.

With a bath in the river and worship of Sangameswara thereafter in the midst of such natural beauty, one cannot but feel purified both in mind and body. The temple was, it would appear, destroyed during the last floods, but the Garbagudi where the idol is installed is intact. I have no doubt that some pious and well-to-do people will come forward, in course of time, to renovate the temple and also construct a choultry for the convenience of the poor and the general public, free of charge.

I do not pretend to say that one sees at this place waterfalls like that at Sivasamudram or the Gersoppa. The attractions here are of a different kind. The confluence of the two rivers is one which has always impressed the ancient Hindus as an ideal place for worship and contemplation: they seem to have had instinctive love for nature and its grandeur—hence their love of rivers, forests and mountains and the existence to-day in many parts of Mysore and India of temples on the tops of hills and mountains and confluence of rivers ranging from the Bull Temple in Bangalore, Sree Chamundeswari Temple in Mysore, Mullaiyanagiri in the Bababudan, the temples at Nandi, Shivaganga, and Gomateswara Swamy at Sravanabelagola, etc., and Badrinath and Kedarnath temples in the Himalayas. Their meeting between two paralleled hills is another; the hills converging to a point is the third: the wounderful erosive action of flowing water on the solid rocks is the fourth; the utter solitude, serenity, and peace of the place is the last and best. Altogether, it is a place which makes a profound and indelible impression upon the mind. It is impossible to forget the vivid impression of the place and its surroundings. It haunts your mind for a number of days and it is always in your mind if you think of it.

WORSHIP OF THIKKARAPPAN.

A POPULAR GAME: THE GROUP OF MEN INSIDE THE CIRCLE HAS TO BE BROUGHT OUTSIDE. THOSE 'IN' CAN DEFEND THEMSELVES OFFENSIVELY, WITH HOT BLOWS: THOSE OUT SHOULD NOT.

SUSPENSE IN FENCING.

THE WINNER RECEIVING THE PRIZE (ONAPUTAVA) FROM THE KARANAVAN OR ELDER.

ONAM—THE GRANDEST FESTIVAL OF KERALA

By A. Hariharan, B.A.

(*Journalist, Ernakulam, Cochin.*)

(A stranger visiting Kerala on Onam Day will be impressed by the contentment, happiness and wealth of her people. He is sure to consider them as the favoured few of God. Onam is the grandest national festival of Kerala; and rich and poor, prince and peasant alike celebrate it. This year Onam was celebrated on 13th September.)

TOWARDS the end of August there is a lull in the onslaught and blind fury of the monsoons. The rivers have a calm and quiet sojourn after months of devastating floods. The sky becomes clear, with only a few patches of white clouds scattered about here and there, and once again a glorious sun shines over Kerala. There is plentiful crop not only of the staple food, rice, but also of all vegetables especially of bananas. For this is the season of bananas, the most nutritive of plantain fruits grown in the west coast. One can find endless plantations of bananas along the river banks, and it is the innumerable bunches of ripe yellow bananas that herald the approach of the grandest national festival of Kerala—Onam.

Annual Visit of Kerala

The popular belief about the origin on Onam is that it is observed by people when Mahabali pays them his annual visit. Mahabali, the great *Asura* king, was a very benevolent monarch under whose parental care the people lolled in the lap of luxury. Want or scarcity was not known anywhere in his kingdom; nor were there epidemics or diseases among the people.

The name and fame of Mahabali spread over all the worlds and Gods became jealous of this earthly ruler, who made representations to Maha Vishnu, the supreme protector of all beings. Maha Vishnu, in order to favour the Gods decided to oust Mahabali from the throne, and came down to the latter's country in the guise of a small boy, calling himself Vamana, the dwarf. Vamana asked Mahabali, renowned for his generosity, to grant him three feet of land to be measured by him. When the ruler consented, Vamana measured the three worlds as two feet, and demanded the third. Mahabali, who was in a fix, asked him to measure the third foot on his own head. The mission of the Lord thus succeeded, for he wanted to send Mahabali to the nether world. However when the aggrieved subjects of Mahabali implored for mercy, the Lord allowed Mahabali to visit his kingdom once every year. It is also said that it was Mahabali who requested the Lord to allow him to visit his subjects on the asterism of Onam in the month of Chingom (August-September.)

A Second Legend

There is a second legend about Onam. According to this, Onam is a festivity intended to commemorate the installation of an idol of Lord Vishnu by Sage Parasurama. There is a place called Trikkakkara in Travancore (very near the Cochin harbour) where it is believed, the Lord first set foot when he demanded three feet of land from Mahabali. Parasurama, the great devotee of Vishnu, consecrated the spot by enshrining the Lord in a temple. Onam appears to be the annual celebration of this consecration. This latter legend is more in accord with the actual observance of Onam. Every household will have idols of Trikkakkara-appan, that is, the presiding deity of Trikkakkara, made out of clay or wood around which flowers of multifarious colours will be strewn so as to form a circle obviously having a bearing on the Sri Chakra, the weapon of Vishnu. People offer materials of worship to the idols during the festival which spreads over ten days.

Parasurama and the Kerala Brahmins

There is yet another legend about the festival of Onam. It is believed that Parasurama was the

creator of Kerala, who lifted the country from the ocean and presented it to Brahmins. When he disappeared from the land he had told the Brahmins that whenever they required his presence they need only meditate on him for his appearance in person. It is said that in order to verify the veracity of the promise the Brahmins, on one occasion, desired the appearance of the Sage. When he appeared and demanded an explanation they had none to offer. Irritated at this the Sage cursed them for not having faith in him. When the Brahmins implored for the mercy of the Sage, Parasurama is said to have replied that in order to favour them he would pay a visit to them every year—on Onam day in the month of Chingom.

Whatever may have been the origin of the festival, the festival itself, as it is observed today, is important and interesting enough to engage our attention. There is mirth and jollity around every hearth in Kerala. Every household presents a festive appearance. All the accumulated savings of the year are lavishly spent on delicious dishes, fashionable dress (*Ona Khoti* or *Ona pputava*) and toys for the young. It is not uncommon for poor people to borrow money for the celebration. There is a proverb in Malayalm (*Kanam vittum Onam unnanam*) which means that one should have a feast for Onam, by selling the right of tenancy occupation if it comes to that. Boys and girls decked in glowing garments and flitting about here and there with little baskets of flowers for decoration, present a very pleasing picture. The sumptuous feast following these is characterised by the importance attached to bananas. Christmas without cakes, and Onam without Bananas! Quite unimaginable!!

A Festival of Sports

Besides, the occasion provides an opportunity for the exhibition of physical strength and fitness. Kerala can boast of a brilliant past for her martial prowess. The Kalaries or schools for training young men in the use of weapons, gave most practical training to the youth of the country in the use of weapons like sword, spears and daggers. The contests for supremacy between various Kalaries were very keen, and they form practically the only theme for heroic poetry in Malayalam literature. We find today various sports and duels conducted during the festival in the interior parts of the country. By far the most interesting and exciting of these is the free hand-to-hand fight between sturdy young men. Another popular game is the *Thalama Pandu* which is played by two groups of men with a ball made of paper and thread. There is the cricket throw and football kick in the game. Fencing, *Kuttium Kolum* are some other favourites with the people. An elder member of society will be asked to judge the performance and award prizes, usually in the shape of fashionable dhoties (*Ona Pputava*) to the deserving competitors.

A Grand Time for Women

While men are thus engaged in the fields, the womenfolk have their own fascinating diversions. There are various games and dances for women such as *Kaikottikhali* and *Kollattam*. It is interstting to observe that Onam has produced a rich crop of folk songs recited while gathering flowers and decorating the idols. The convention of making some presents to the landlords by the tenants has also been reared round this festival. The rivalry between the tenants of the same lord can be seen in the presents made. The wonderfully large bunches of bananas specially grown for presentation will win the approval of any institute for agricultural research. The cordial relations that subsist between the tenant and lord are borne out by the fact that the lord is expected to make rich presents to the tenant so as to enable him to celebrate Onam on a decent scale.

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GOVERNMENT AND INDUSTRY

By Prof. V. L. D'Souza, B.A., B.Com. (Lond.),

(Professor of Economics, Maharaja's College, Mysore.)

DURING the last quarter of a century partly under the stress of the Great War (1914-1919) and partly under the stress of the Great Depression (1929-1935), almost every country has engaged in some form of economic effort to promote industrial prosperity. It is evident that a good many of the measures have been in response to temporary emergencies while others have come to stay. It is worth our while to review the whole sphere of State action as it stands to-day and to take note of the various possibilities for Government intervention in the economic life of India that such a survey will reveal.

Economic action on the part of the State can take either of two main forms. In one, the Government takes charge of the whole economic process and operates a planned economy. In the other, Government action and private enterprise go hand in hand. The U. S. S. R. falls into the first of these categories. The remaining countries, about 65 in number, fall into the second. We are not concerned at present with planned economic systems. Our survey deals with the methods of State action in capitalistic countries where private initiative still plays the major part in the making and marketing of goods.

Even under a system of the most complete *laissez-faire* the Government has a certain economic rôle to play. It is the extension of the rôle and also its intensification that makes for, what the prevailing system may be designated as, planned capitalism. There is a growing belief that it is the duty of the state to see not only that nobody starves but to ensure that the economic machinery of society runs smoothly and efficiently and that in particular it affords adequate employment for men and capital alike. The prevalent notion is that it is necessary for the State to take over a large measure of social responsibility and to improve the standard of living of the mass of the population. State action in the industrial sphere has won the approval of the Conservative as well as the Liberal.

It is difficult to cover the whole ground of State action within the limits of a short essay. We can give only the barest indications of the multitudinous forms of State intervention. We cannot go into the details of any particular scheme or project but we make an attempt to see the movement as a whole or, to vary the metaphor, to bring the different types of action into focus simultaneously.

State aid to Industry

Even in the days of unadulterated *laissez-faire* the State rendered certain indirect aids to industry. Technical assistance, such as the provision of business information, experimental farms, research institutes and State insurance had become a recognized part of official activity. During recent years financial aid to industry has become a marked feature. It takes various forms, *e.g.*, Government guarantee of the interest on loans and Government participation in the capital of the concerns. An extreme form is the Reconstruction Finance Corporation of the U.S.A. which has made loans to or bought shares in industrial corporations and has thus kept businesses from tottering in a time of economic depression.

The most noteworthy of all types of State aid is the grant of bounties or subsidies. Even those countries where the *laissez-faire* doctrines are deeply entrenched have made subsidies quite a feature of their budgets. The Netherlands makes a large allocation every year for financial assistance to market gardeners, bacon producers and exporters of dairy produce. Great Britain makes a grant of three million pounds to the growers of sugar-beet while Japan subsidises the associations of small producers. In addition there are a great many disguised or veiled forms of bounty: remission of taxation, reduction of freight charges and special rates of exchange.

State Management of Industry

One brought up in the school of orthodox economics scarcely realizes the extent to which

Governments are now taking a hand in the making and marketing of goods. The old notion that there is no middle way between private enterprise and state ownership has been superseded. In practically every country, private undertakings and state enterprises are found side by side. The mixture of industrial activity emanating from the capitalist and the Government constitutes a new situation.

State intervention in economic life may take one of many forms. It may amount to the actual management of business enterprises by a Government agency. Industries of key importance, such as iron and steel in Japan, and public utilities such as electrical supply in Great Britain, have become the proper subjects for State management. Sweden has made a speciality of State purchase of wholesale drug and medicine houses while the Government in U.S.A. has created a network of State enterprises, called the Tennessee Valley Authority, which serves as a "yardstick" by which to measure the costs in similar groups of industries under company management. The most successful method of State management of industry has been the "public corporation" under which persons directly responsible for the actual administration of the business are appointed by the State but they are left free to run the undertaking in their own way within the limits prescribed by general policy. The public corporation type of State management is likely to grow in popularity as it appears to be a happy compromise between economic individualism and governmental regimentation.

State regulation of output

State regulation or adjustment of output involves price fixing and control of productive capacity. In a system where private enterprise and State action intermingle, the adjustment of output becomes a fairly easy problem. For economic equilibrium the various kinds of goods—capital goods and consumption goods—should be produced in the right proportions. Whenever there is persistent disproportion in the production of particular commodities, the State has to make the necessary adjustment.

Adjustment of output necessitates direct control on the part of Government of prices, production and productive capacity. The control of prices ranges all the way from general price control over practically all commodities as is the case in Germany to State action calculated to mitigate seasonal price changes, as for instance of wheat in Canada or coffee in Brazil. Apart from price fixing on behalf of the consumers with which we are not at present concerned, price determination by the State in the producers' interests has become almost a normal feature of some administrations. A characteristic type of price fixing consists in the setting up of a price at which the Government itself guarantees to buy all that is produced as for instance the cereals scheme in Czechoslovakia. Another method of price control is that the producer sells at the market price, the State making up the difference between the price obtained and the price guaranteed, *e.g.*, the wheat scheme of Great Britain. Yet another method, illustrated by the butter scheme of Australia, is to fix a high price for the home market and subsidise the exports out of the surplus realized from the domestic consumers.

Government control of output has also been successfully attempted in recent times. We have to bear in mind that price control and output control are inseparably connected. Whether prices are fixed and the output is left to adjust itself to the situation or *vice versa* leads more or less to the same result, namely, the restriction of output. State regulation of the amount produced has become an important device though at times it assumes fantastic shapes. The ploughing-in of over 10 million acres in U.S.A. in 1933, thereby carrying out a partial destruction of the cotton crop, the burning of coffee in Brazil to an amount exceeding one year's total world consumption and the slaughtering of cattle in Argentina and Hungary are but sorry examples of an operation whose primary object ought to be a planned restriction of output.

Even more important than the control of prices and of output is the State regulation of productive capacity. Regulation in practice means a reduction to the point where supply can meet the new demand conditions. Thus in the U.S.A. the Government gives a subsidy for the restriction of wheat and cotton acreage and the French Government does the same for the vineyards. In Bulgaria and Czechoslovakia the Government prohibits the establishment of new factories or extensions in certain industries. A number of the industrial codes under the New Deal prohibit any increase in capital equipment until demand improves. The restrictionist movement may be carried to great lengths as in Germany where further investment in some thirty important branches of industry was forbidden, as it was

thought the investment had already outrun the possible demand.

So much for methods of direct regulation. Government also exercise indirect control over prices, output and productive capacity and this kind of control is operated through associations of producers. The State, as in Germany, might compel the formation of cartels, an important feature of which is to force the outsiders to join so as to obtain unity of management and economies of marketing. Or again the State, as in Poland, might promote schemes of self-government in industry by which the majority of producers in a given industry will have power to frame decisions binding on the whole body.

Government control creates the need for further and further measures as in a concentric circle. Control is contagious and a Government which sets about regulating prices, output and productive capacity will soon discover that there are hardly any frontiers to its activity. Thus a Government that determines the price of one product will be called upon, sooner or later, to determine the prices of connected and complementary goods. Any intervention at any single segment of the price system can rarely be an isolated act but its repercussions spread over a wide area.

Moreover if price is controlled, output also must be controlled and restrictionism tends to grow. Thus the Government may be obliged to pass a measure to the effect that fields taken out of rice or wheat cultivation are not used to grow sugarcane or rye and thus spoil the markets for these. Neither should the manufacturers, say millers, be ground between the upper stone of price-fixing regulations in favour of producers of wheat and the nether stone of price-fixing regulations in favour of consumers of bread. These difficulties do not dispense with the idea of State action but they call for caution and an application of economic judgment to government intervention.

State Adjustment of Consumer Demand

An analysis of the Great Depression revealed the existence of an almost infinite capacity to produce and, despite huge populations, an insufficient capacity to consume. In other words production was running ahead of effective demand and the people though willing to buy had not the purchasing power. The best remedy for the unbalance between output and consumption seemed to be for the State to create and maintain effective demand.

The measures proposed to keep the industrial system on an even keel are classified as either contractionist or expansionist. The contractionist method relies upon a reduction in prices and costs. In practice it amounts to a diminution in the total quantity of money in circulation, increased taxation to balance the budget, diminution in State expenditure, reduction of interest on loans, scaling down of farmers' debts and wage-cutting under the initiative of the Government. Germany, Italy and France have tried Government policies tending in these directions. Their object is to reduce costs to the level of effective demand.

The expansionist method adopts the opposite line. It is based on the argument that if more and more purchasing power were placed in the hands of potential buyers, prices would cover costs, surplus stocks would be sold, the unemployed resources would be brought into active use. The demand would become effective to the point where consumption would be equal to the wealth produced. Under the influence of expansionist ideas, Great Britain and the countries of the Sterling Bloc broke off from the Gold Standard and allowed their currency to depreciate or become cheap in terms of foreign currencies while the United States without actually going off the Gold Standard reduced the gold value of her dollar. The expansionist process has been followed up by what is called "open-market operations", that is to say, by the State Bank purchasing securities with a view to inject additional purchasing power into the monetary system. The process leads on to low interest rates and "cheap money" for businessmen. The Government then goes a step further and borrows a part of the abundant supply of purchasing power and uses the funds for public works, relief schemes and social services, thus placing new money in the hands of potential buyers of goods. In Germany, the measures for increasing effective demand were associated with a rigid system of price control with the result that the whole of the expansionist policy was directed towards increased activity. The expansionist ideas are tending to become a part of the permanent technique for business stabilisation.

State Intervention In Foreign Trade

Government interference in the conduct of international trade is of the utmost complexity. It takes various forms and most of these are

inter-connected with the various types of the State action within the country itself.

The oldest and by far the most important method of State intervention in foreign trade is the regulation of imports and exports. On the imports side the chief motive of action appears to be restriction on the entry of foreign goods, prompted by a variety of considerations such as the desire to protect home industry from foreign competition, or as an offset against currency depreciation and dumping and as a preventive of an adverse balance of payments. The simple device of the tariff is now supplemented by quotas, licenses, prohibitions and blocked accounts.

In contrast to the restriction of imports, every encouragement is given to the exports and among the measures thereof we may mention export subsidies, State credits to exporters, assumption by the State of the trading risks and the setting up of marketing organizations under State direction. While in theory the advantages of free international exchange are conceded by all, each country overcome by fear of unemployment, of war and of exchange difficulties pursues in practice a policy of national self-sufficiency. Imports are suspect so long as effective demand in the home market is not sufficient to keep capital and labour reasonably fully employed.

Conclusion

The Governments in India still cling to the doctrines of Non-Interventionism. Their policy in the main has been one of rugged individualism, a policy which produced untold wealth in the United States of America while in India it has made hardly any impression on the standard of living. In recent years there has been a change, but compared with the Western countries or with Japan, the Government policy is one of caution and slow advance.

Mysore, however, is a happy contrast to the prevailing inactivity and the faint-hearted in India might take a lesson from her venturesomeness. Mysore, like Indian States in general, has certain advantages. Mysore is not afraid of making mistakes and if she makes mistakes she knows how to turn them to account. She is ready to risk loss of money for the ultimate end. The powers of Government are concentrated and not diffused as between Central and Provincial Governments with a corresponding division of responsibility and resources. The Dewan himself takes personal interest in industrial development and directs the industrial policy of the State. There is, above all, identity of interests between the Ruler and the ruled. Thus, quicker results are obtained and greater progress is made than what the more impersonal Governments of British India can show. Mysore has her own handicaps and she is without the chief means of encouraging industry such as tariffs, railway policy and a large internal market. All the same, Mysore has led India in State action for industrial development and she is on a par with some of the Western countries in the attempts to pioneer, create, foster and maintain her industries.

MEDICAL COLLEGE

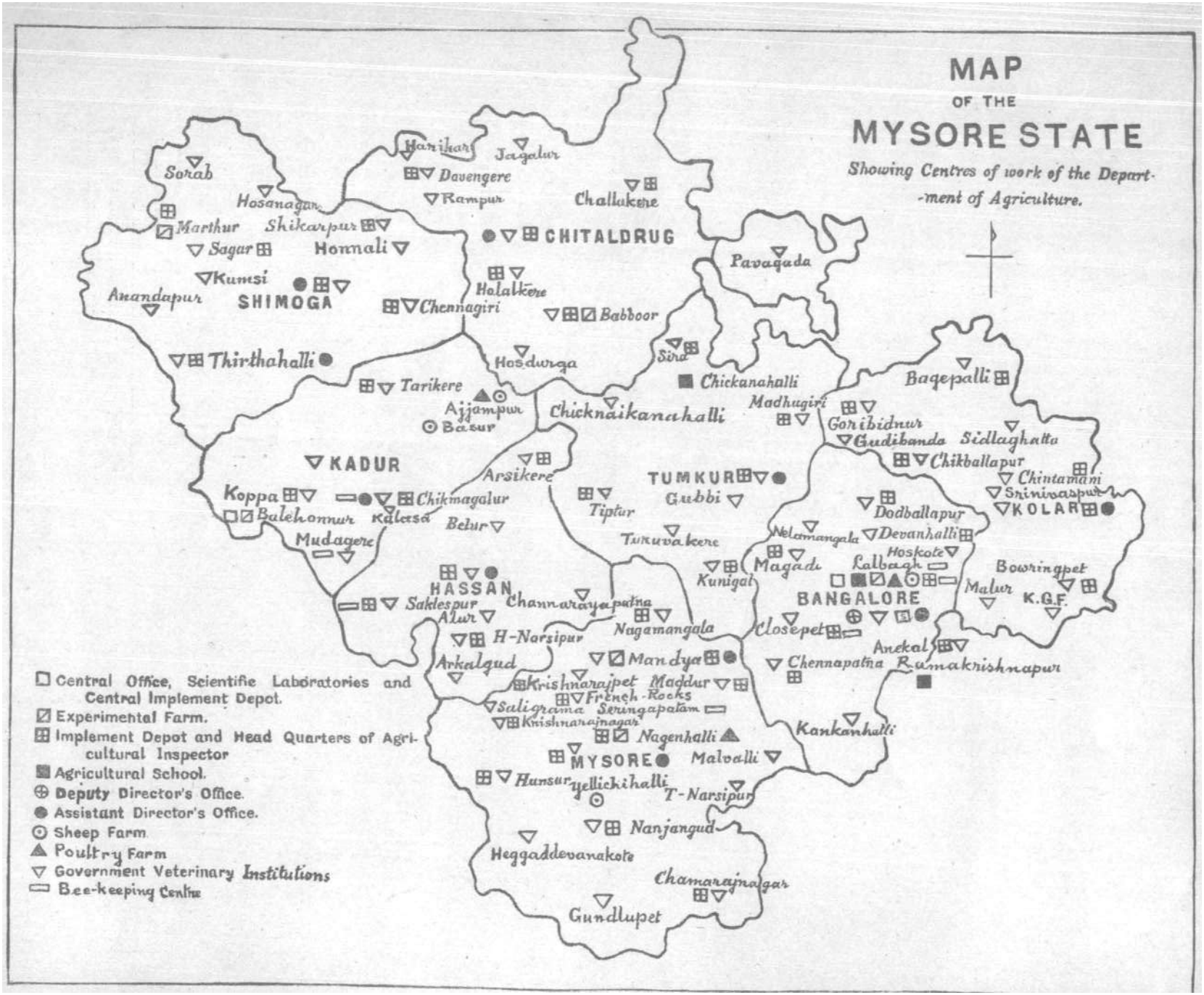
THE University Medical College which was transferred from Bangalore in the year 1930 has been making steady progress in its equipment and tutorial staff. The strength of the college was 72 in 1930, the year when it was shifted to Mysore, and it is now 154.

Additions have been made to the buildings and accommodation has been provided to instal a freezing plant to preserve cadavers. Extension to the Anatomy Block and the north wing have been carried out during the above period.

The Pathology Department of the College has been housed in the newly constructed Sri Murugharajendra Pathological Institute, a generous gift of the Sri Murugi Mutt.

The laboratories are being equipped with the latest and up-to-date apparatus.

Several of the alumni of the College have proceeded to foreign countries for advanced studies in Medicine and have returned with creditable successes.


MAP
OF THE
MYSORE STATE
Showing Centres of work of the Depart-ment of Agriculture.
Harihar
Jagalur
Davengere
Rampur
Challakere
Sorab
Hosanagar
Marthur
Shikarpur
Sagar
Honnali
CHITALDRUG
Pavagada
Kumsi
Anandapur
SHIMOGA
Holalkere
Chennagiri
Babboor
Thirthahalli
Hosdurga
Sira
Chickanahalli
Baqepalli
Tarikere
Ajjampur
Basur
Chicknaikanahalli
Madhugiri
Goribidnur
Gudibanda
Sidlaghatta
KADUR
Arsikere
TUMKUR
Chikballapur
Chintamani
Srinivaspur
KOLAR
Koppa
Chikmagalur
Balehonnur
Kalasa
Belur
Tiptur
Gubbi
Dodballapur
Mudagere
Turuvakere
Nelamangala
Devanhalli
Hoskote
Magadi
Lalbagh
Bowringpet
Kunigal
HASSAN
Malur
K.G.F.
Saklespur
Channarayapatna
BANGALORE
Alur
Nagamangala
Closepet
H-Narsipur
Anekal
Arkalgud
Mandya
Chennapatna
Ramakrishnapur
Krishnarajpet
Maddur
French Rocks
Saligrama
Seringapatam
Krishnarajnagar
Kankanhalli
Nagenhalli
MYSORE
Malvalli
Hunsur
Yellichihalli
T-Narsipur
Nanjangud
Heggaddevanakote
Chamarajnagar
Gundlupet
Central Office, Scientific Laboratories and Central Implement Depot.
Experimental Farm.
Implement Depot and Head Quarters of Agricultural Inspector
Agricultural School.
Deputy Director's Office.
Assistant Director's Office.
Sheep Farm
Poultry Farm
Government Veterinary Institutions
Bee-keeping Centre

AGRICULTURAL DEVELOPMENT IN MYSORE

By T. G. Rama Iyer, B.A.,
Director of Agriculture.

BRIDGING THE GULF.—The criticism, commonly levelled against Agricultural Departments in India that the fruits of research conducted in the laboratories and farms do not reach the raiyats' field, has, to a considerable extent, been met by the Department of Agriculture in Mysore, by the chain of Subvention Farms in the holdings of influential raiyats, demonstration plots, numbering at present nearly 4,000 laid in raiyats' fields and Seed Farms to meet the increased demand for improved seed. Our attention is, at present, being focussed on the opening of a large number of Subvention Farms by which the raiyat himself carries out the experiment and decides as to which variety of seed is most suited to his land, locality and climate. The advantage should not be overlooked that large scale expenditure involved in opening a Government Farm for experimental work, is obviated by this method. Subvention Farms have been opened all over the State for important crops such as sugarcane, paddy and groundnut.

Statistical methods are being followed in the six Government Experimental Farms in the lay-out of field experiments. There are, at present, 126 of these experiments under way dealing with sugarcane, cotton, paddy, ragi, groundnut, tobacco and coffee. The Department has 74 depots in the nine districts dealing in implements and seeds in charge of Agricultural Inspectors and Fieldmen.

Agriculture paves the way for Industry and Co-operation.—The fruits of the work of the Department are evident in the growth and expansion of such industrial concerns as the Mysore Sugar Factory, Mandya, the Mysore Tobacco Company and the Coffee Curing Works, Chikmagalur. Besides joint-stock concerns a number of Co-operative Societies are doing agricultural work, like the Maradihalli Co-operative Society, in the Chitaldrug District supplying pure cotton seed, the Fruit Growers' Co-operative Society at Belur for marketing oranges, a Bee-Keepers' Society at Saklespur for supply of pure honey and the Arecanut Marketing Co-operative Societies in the Shimoga and Kadur Districts, which deal in the purchase and sale of spraying materials and sprayers for the prevention of *koleroga* or rot disease of arecanut.

The Mysore Agricultural and Experimental Union.—In the scheme of demonstration and propaganda the members of the Mysore Agricultural and Experimental Union play an important part in testing out and spreading the results of experiments conducted in the Government Farms. The Union publishes an English Quarterly Journal and a Monthly Kannada Journal.

Agricultural Colony.—An interesting experiment, in the formation of an Agricultural Colony, in the Irwin Canal area has just been undertaken by the Government. Under this scheme ten colonists are selected to whom advances for housing and cultivation are made by Government to start with. Each colonist deposits a sum of Rs. 1,000 in earnest of his determination to carry out the recommendations of the Department.

Inter-cropping.—The idea of inter-cropping, that is, of making the best use of the land by raising two compatible crops, side by side, in the same season on the same land has not been fully exploited by the raiyats, though in some parts of the State, such as Chitaldrug District, inter-cropping of *navane* and cotton, and groundnut and cotton is practised. Inter-cropping of ragi and *avare*, and ragi and *thogari* is also common. The new idea is being developed of utilising the area under ragi which amounts to nearly 23 lakhs of acres, for growing cotton, as far as possible. M.A. 11 cotton as an inter-crop with ragi on the red soils of Mysore has done very well. With the extension of this work, we shall be on the way to stem the tide of large scale imports of cotton by the local mills, which, at present, amounts to nearly 50 lakhs of rupees.

Botany:—Sugarcane.—The breeding of improved varieties of sugarcane by seedling selection, hybridization and irradiation by means of X-ray is being continued. H.M. 320 is still a very popular cane in the Irwin Canal area. Of the recently evolved canes, H.M. 661 holds out very great promise. It possesses high sucrose content and gives high tonnage. It has done well at Irwin Canal Farm and Babbur Farm under two different climatic conditions. This variety is being rapidly

multiplied for trial on a large area at Irwin Canal Farm and Sugar Factory Farms. Next in importance come H.M. 657 and H.M. 656.

Cotton.—M.A. II (Mysore-American) cotton is replacing the local *Doddahatti* in Banavar area. It is a cotton, which thrives equally well under irrigated red, loamy soils or under rain-fed conditions. It has given as much as 1,100 lbs. per acre under favourable conditions and under ordinary conditions, it has yielded nearly 500 lbs. Cotton can be grown throughout the year in the Irwin Canal area; the highest yield so far obtained was from a crop planted in March.

Improved varieties of cotton, evolved by the Department under the Mysore (*Doddahatti*) Cotton Scheme of the Indian Central Cotton Committee, have given us very encouraging results. Four hybridized strains which are superior to M.A. II in lint percentage and lint length are being multiplied.

In the black cotton soil area H. 190 is very popular. Other Asiatic cottons evolved at Babbur Farm—C.N. 86, Strain 19 and the recently hybridized Asiatic cottons at Babbur—Strain 209-1, Strain 209-19, Strain 35—are being multiplied.

Groundnut.—Over 400 selections of groundnut are under study. Out of these there are several strains of hybrid origin which hold out great promise. Work is in progress for evolving early maturing and heavy yielding types. Strains are also being selected for either fodder or for green manure purposes.

Ragi.—H. 22, K. 1 and E.S. 11 are very popular. Thirty-six varieties are under statistical trial at the Irwin Canal Farm and at Hebbal Farm.

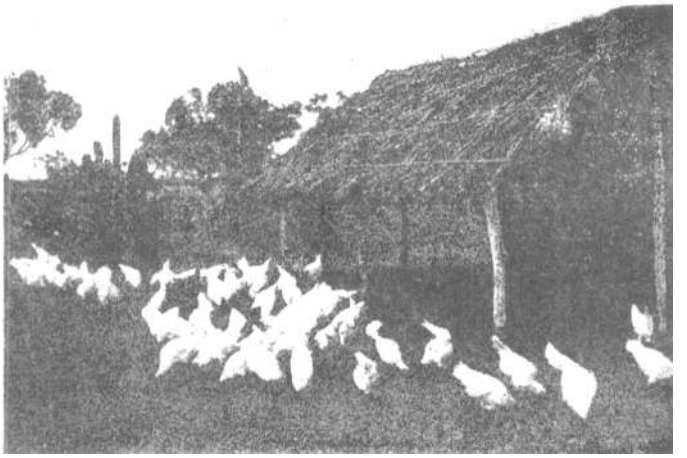
Paddy.—The Paddy Special Officer has made 2,313 individual plant selections in 34 *malnad* and semi-*malnad* paddy varieties. Of the fine strains of paddy tried in *malnads*, S. 661 and S. 684 are found to be good. Over 1,000 pallas of these strains have been distributed in Shimoga and Kadur Districts. In all, 806 demonstration plots were laid in raiyats' fields throughout the State during 1939-40 and S. 661, S. 684, S. 476, S. 139, S. 67, S. 246, S. 236, and S. 199 were grown in these plots. S. 661, S. 684, S. 236 and S. 246 are rapidly spreading in Mysore, Seringapatam, T.-Narsipur and Krishnarajnagar Taluks. S. 139 and S. 67 are in demand in Heggaddevankote, Nanjangud, Krishnarajnagar and Arkalgud Taluks. There was a heavy demand for summer paddy this year and the Department distributed about 150 pallas in Tumkur, Mysore, Hassan and Bangalore Districts. Two hundred and fifty-two individual plant selections from *gidda byra* (summer paddy) are under trial on the Hebbal Farm.

Live and herbarium specimens of improved crops, sugarcane, cotton, groundnut, ragi, jola, paddy, castor and pulses—are exhibited. The economic advantages of the improved varieties over the local or standard varieties are brought out in the details given for every crop.

Agricultural Chemistry.—Over 40 trials on the latest approved statistical lines were laid down on the several Government Farms to ascertain the economic and optimum dose of manures for the principal crops of the State. It was found that irrespective of the type of soil on which the crops were grown nitrogenous fertilizers and manures exerted a profound influence on yield and quality of cane. Thus as much as 500 lbs. of nitrogen could be applied with profit and advantage to one acre of sugarcane, yielding nearly 60 tons of crop per acre. An application of 300 lbs. of nitrogen per acre renders the margin of profit small and it is definitely profitless to apply smaller doses than this. The extra cost involved in the higher application is well worth the outlay as the net profit per acre is increased by 75 rupees. An application of 20—30 lbs. of nitrogen in the form of Sulphate of Ammonia, preceded by heavy applications of green manure raises the yield of paddy by over 25 per cent and gives a net increase in profit of Rs. 30 per acre. Extended trials on the manurial requirements of tobacco have shown that a combination of the three plant foods, *viz.*, N.P. and K. in the ratio of $2 : 5 : 2\frac{1}{2}$ gives a 20 per cent higher yield of superior quality leaf over any other combination. This particular manure mixture is now being used on a large scale on all the Government Farms and by most tobacco growers.

The use of decolourizing activated carbon for the clarification of cane juice sugar was successfully demonstrated during the year. Three tons of this carbon were prepared of which a ton was sold to private parties for preparing this kind of sugar and clean jaggery.

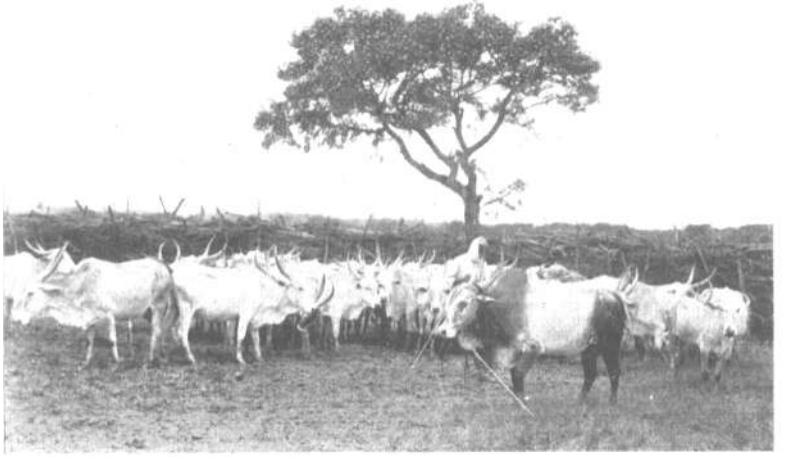
Preparation of compost and demonstrations of its use for dry and wet crops were continued during the year, over 1,500 tons being prepared on the Government Farms at a cost of less than Re. 1 a ton with a relative manurial money value of at least four times its cost price.



WHITE LEGHORNS ON A GOVERNMENT FARM.

IMPROVED WOOL SORTED AND PACKED; BLANKETS MADE OUT OF CROSS-BRED WOOL; KOLAR SHEEP BREEDERS' ASSOCIATION

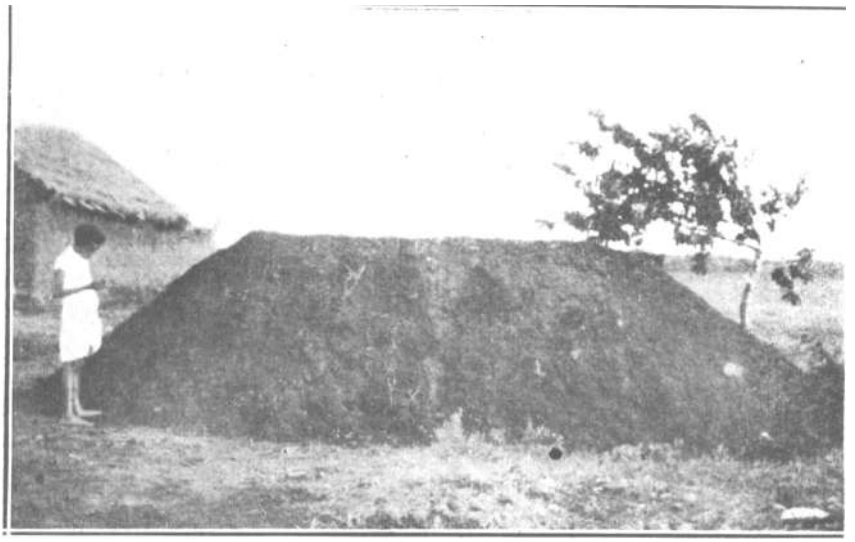
TRACTOR SERVICE.



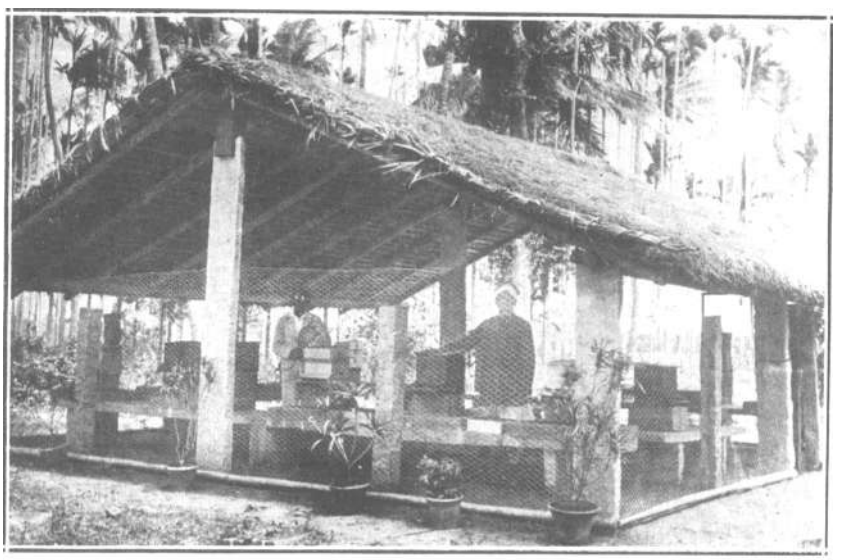
AN AMRIT MAHAL HERD OF COWS HEADED BY AN AMRIT MAHAL BULL.

RAGI AND COTTON INTERCROPPING.

A PADDY PLOT WHICH YIELDED 40 PALLAS PER ACRE.



A FINISHED HEAP OF COMPOST.



INTENSIVE BEE-KEEPING BY A LANDLORD AT MALUR.

Mycology.—The ravages caused by the *koleroga* of arecanut, black rot of coffee and other diseases can be seen from the fresh specimens exhibited. The effect of control measures, the various chemicals used in the control of plant diseases, as well as the types of sprayers being used in the areca gardens and coffee estates are also on view. About 7,000, one-gallon sprayers have been sold so far by the Department. During the previous year, 15,000 acres of arecanut and about 15,000 acres of coffee were sprayed by the owners. Many of the coffee planters are getting their own spraying materials direct.

The Mysore Cigarette Tobacco Safeguarding Act has regulations for the control of tobacco diseases. This has created a demand for sprayers and spraying materials from the tobacco growers. Spraying has become a regular routine operation in the tobacco nursery against damping off and frog-eye spot and in the field against mildew.

Spraying to control the downy mildew and powdery mildew has become popular in Bangalore and its environs. The root disease of arecanut and coconut palms (*Anabe roga*) can be controlled by the application of sulphur dust to the soil round the affected palms. Garden owners are beginning to appreciate the benefits of this treatment.

It has been estimated that the annual loss due to plant disease amounts to 10 per cent of the yield. On this basis, the loss caused to crops in the State would amount to 120 lakhs of rupees per annum, which represents roughly the total land revenue collections of the State thus spraying ensures a successful crop.

Entomology.—The field, garden and plantation crops are infested by a variety of insects which cause appreciable damage. A scientific and critical study of such insects is undertaken both in the field and in the laboratory, with a view to finding cheap efficient and practicable methods of control. The more important of the insect enemies are the stem borers of sugarcane, paddy, coffee, tobacco and cotton and beetles and moths of stored pulses and cereals.

One of the beneficial insects, useful to man because it keeps down a pest of his crop, namely, the minute wasp that parasitises the eggs of sugarcane borers is now being reared in millions at Mandya and released in the fields of the Irwin Canal tract. Last year 12 millions of them were reared and released in nearly 1,200 acres of young cane with very satisfactory results. This method of control, instituted in Mysore, for the first time in India, has attracted considerable attention on the part of the Entomologists in Northern India and several of them have paid visits to the Parasite Laboratory at Mandya. A supply of sufficient numbers of this beneficial insect for control of cane borers in Orissa and Bihar was sent at the request of the Second Entomologist at Delhi. The results of the parasite releases undertaken there have been very encouraging and parasites were supplied this year to cover 40 acres of cane in Bihar.

Rules under the Destructive Insects and Pests Regulation, VI of 1917, were framed for the prevention and spread of the Coffee Borer Pest (*Xylotrechus quadripes*)and have been in force for the past three years in the districts of Hassan and Kadur. Thirty-four lakhs of borer infested coffee plants were uprooted and destroyed last year alone.

The methods of modern bee-culture and honey production are demonstrated and the necessary appliances shown. The development of bee-culture in the State is being vigourously pursued by this Section; 12 centres of demonstration, 8 in the *malnad* and 4 in the *maidan* have been opened and instruction is given there in the handling and management of colonies. A recent development in this connection has been the establishment of a Bee-keepers' Co-operative Society at Saklespur in order to render all possible help on a co-operative basis to bee-keepers in the *malnad* areas. Suitable marketing facilities are also afforded to honey producers there. During the past three years alone nearly 800 improved bee-hive boxes and 32 honey extractors and various quantities of other appliances were sold to the public by the Department. As much as 600 lbs. of pure honey were also extracted through the agency of the Section, during the year; this is quite apart from other quantities extracted by bee-keepers who have their own honey extractors. Experiments in the matter of importation and establishment of suitable varieties of foreign honey bees are being conducted.

The exhibits include a number of indigenous plants and plant products that have been found to be of insecticidal value. A very efficient contact insecticide in the form of a soap prepared here from the oil of the seeds of *Pongamia glabra* (*honge*) has now entirely replaced the fish-oil soap that was originally being imported from outside Mysore.

Agricultural Engineering.—Besides its routine work, the Section has helped in the manufacture

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of improved bee-hives and bee-keeping appliances and in the construction of poultry runs, jaggery furnaces, etc.

The Section now has two tractors, one, a 20 H.P. kerosine fuel tractor and the other, a 25 H.P. kerosine tractor, adopted to charcoal fuel, which is burnt in a separate gas producer, attached to the tractor. This latter is the first of its kind, established for agricultural service in India. The tractors are let out to intending users, either for ploughing or for discing. It is hoped by this means to bring into cultivation large areas of cultivable land in the State that is left fallow for lack of proper implements.

Civil Veterinary, Live-Stock and Amrit Mahal Department.—There are 81 Veterinary Dispensaries in the State. As many as 25 of these are donated by philanthropic gentlemen; 12 more of such are under construction. There are three farms devoted purely to Live-stock, *viz.*, the Cattle Breeding Station at Ajjampur and Hunsur, and the Sheep Farm at Yelachihalli. Besides, the Kolar Sheep Breeders' Association started in the year 1922, two new Sheep Breeders' Associations have been started, one at Mysore and the other at the Closepet Rural Welfare Centre, where facilities are given to the members for the purchase of cross-bred rams for stud purposes at a concession rate. During this year, the Civil Veterinary and the Live-Stock Departments were amalgamated into one combined Civil Veterinary, Live-Stock and Amrit Mahal Department under one Superintendent. Two posts of Sheep Expert and Poultry Special Officer have been created to deal with the increased work in these branches.

The Department continued its campaign, as usual, to protect live-stock against Rinderpest, Blackquarter, Hæmorrhagic Septicæmia, Anthrax and Sheep-pox.

During the year breeding bulls were purchased and are maintained one in each of the Veterinary Hospitals at Mysore, Hassan, Shimoga, Chikmagalur and Tumkur. At Chikmagalur, one buffalo bull also has been stationed, in addition.

Poultry farming is making rapid progress and poultry farms have been opened at (1) Closepet, (2) Hassan, (3) Shimoga, (4) Chikmagalur and (5) Chikkanahalli, in addition to the poultry farms already in existence.

Mysore Serum Institute.—The following statement shows the quantities of biologicals supplied from this Institute during 1939-40.—

		To Mysore C. V. D.	*Outside the State.*
1.	Anti-Rinderpest Serum ...	52,400 doses	1,40,900 doses
2.	Hæmorrhagic septicæmia serum	5,820 ,,	20,120 ,,
3.	Blackquarter serum ...	1,160 ,,	5,740 ,,
4.	Anti-Anthrax serum ...	40,040 ,,	7,900 ,,
5.	Anti-Fowl Cholera serum ...	900 c.c.	8,680 c.c.
6.	Hæmorrhagic septicæmia vaccine	27,250 doses	40,800 doses
7.	Blackquarter bacterin ...	70,940 ,,	15,550 ,,
8.	Blackquarter filtrate ...	nil	nil
9.	Fowl Cholera vaccine ...	900 c.c.	4,900 c.c.
10.	Sheep-pox vaccine ...	301 c.c.	734 c.c.
11.	Rinderpest Bovine virus ...	nil	nil
12.	Rinderpest goat virus ...	56,265 c.c.	1,515 c.c.
13.	Anti-Rabic Vaccine—		
	(*a*) Preventive prophylactic	16,295 c.c.	510 c.c.
	(*b*) Curative prophylactic...	56,100 c.c.	1,555 c.c.

It is of interest to note that over 14½ million unit doses of the different biologicals have been prepared and issued from the Institute since its inception in 1927 to the end of June 1940.

The Research Section attached to this Institute conducts experiments in the investigation of diseases of cattle and poultry as also in the preparation and standardisation of special prophylactic and curative specifics. The Anti-rabic vaccines have been prepared and issued for field use for the first time this year and as many as 54,470 c.c. have been issued.

Specimen bottles of the sera and vaccines prepared in this Institute and of parasites found in domestic animals together with some interesting and instructive photographs, charts, graphs and rare pathological specimens, etc., are exhibited.

Publications.—The following publications have been issued by the Department during 1939-40:—

Annual Report of the Department of Agriculture, for the year 1937-38 (English).

Agriculture in Mysore (Second and Revised edition, English).

Paddy Cultivation in Mysore, General Series Bulletin No. 20 (English and Kannada).

Biological Control of Sugarcane Borers in Mysore, Entomological Series, Bulletin No 12 (English).

Annual Report of the Coffee Scientific Officer to the U.P.A.S.I. 1938-39 (English).

Mysore Agricultural Calendar for the year *Vikrama*, 1940-41 (English and Kannada).

Leaflets in English and Kannada on Bee-keeping in Mysore, Coffee, Preparation of Compost, Cotton improvement in Myosre, Cattle in Mysore, The Mysore Serum Institute, Sheep Breeding in Mysore Clean Jaggery, Poultry in Mysore, Paddy strains evolved by the Department and Cardamoms.

RURAL RECONSTRUCTION IN MYSORE

By *Rukn-ul-Mulk* S. Abdul Wajid, B.A.,

Revenue Commissioner in Mysore.

Introduction

THE Mysore State occupies a position physically well defined in the south of India. The total area of the State is 29,445 square miles, of which 13 square miles have been assigned to the Civil & Military Station of Bangalore, which is administered by the Hon'ble the British Resident in Mysore.

According to the Census of 1931, the population of the State was 6,557,302 spread over 108 towns and 16,483 villages.

Preliminary

The great problem which is of late attracting the notice and exercising the minds of all well-wishers of the country is that of Rural Reconstruction with the object of ameliorating the condition of the masses. The improvement of the villages in the State in respect of sanitation, water-supply, communications, education, agriculture and industries has come in for special attention from 1914. A number of Village Improvement Committees were appointed throughout the State and a system of weekly labour for tidying up villages, mending village roads and attending to other matters of local interest was instituted. A good deal of useful work was done by these Committees. The Mysore Local Boards and Village Panchayet Act of 1918 was passed with the object among others of placing Self-Government on a statutory basis. With a view to make better provision for the administration of village affairs by the villagers themselves and thereby develop the spirit of self-government in the rural areas of the State, the new Village Panchayet Act of 1926 was passed and was brought into force on 1st February 1927. Every village in the State, whether Government or Inam, has got a Panchayet or forms a member of the Panchayet formed for two or more villages.

Development and Activities of Village Panchayets

It is a little over 13 years since the new Village Panchayet Act came into effective operation in the State and during this period, 11,845 Village Panchayets have been constituted to administer local affairs in rural areas. During this period, the Panchayets have done a lot by way of sinking drinking water wells, constructing approach roads and Village Halls, arranging for Medical aid, street lighting and village scavanging and providing village libraries and other amenities. The system of weekly labour has been made popular and it is estimated that the labour turned out during these years is worth over Rs. 12 lakhs in money value. The Panchayets have done much in the matter of undertaking minor sanitary works, distribution of quinine and other country medicines and they are now interesting themselves in getting the services of midwives and erection of Maternity Homes. Thirty-six Village Panchayets have constructed Maternity Wards in their villages, while 23 have arranged for the weekly visits of Sub-Assistant Surgeons, to treat the sick in their respective jurisdictions. Some of them are interesting themselves in the development of agriculture in that they have assisted in the distribution of improved agricultural implements, popularisation of new seeds, etc., besides the maintenance of breeding bulls to improve the breed of cattle. Four hundred and fifty-six Village Panchayets are using improved agricultural implements and 301 have maintained breeding bulls. Besides undertaking to manage village schools, tanks, village forests, topes and muzrai institutions, etc., some of them have been taking a good deal of interest in the formation of parks and in the rearing of fruit trees. One hundred and sixty-two Village Panchayets have laid out parks, 145 are rearing fruit trees and 815 have planted fruit and shade trees in their villages. Most of

them have planted economically useful trees in their Parks. Eight hundred and six Village Panchayets have maintained either Libraries or Reading Rooms. One hundred and thirty-eight villages have been provided with electric lights for street-lighting. Forty-one Village Panchayets have availed themselves of electric power for agricultural purposes, and 22 for industrial purposes. Three Radio sets have been supplied—one for use in Tumkur District and the other two in the Kolar District.

Concentrated Propaganda for Rural Welfare

Several important measures have been undertaken for the rural uplift. Although the progress achieved so far has been substantial it was felt however, that the time had arrived to adopt more intensive efforts in at least some selected villages in each District so that these villages might serve as models of good Panchayet Administration for others to follow. Consequently Government in May 1936 inaugurated the scheme for organising concentrated propaganda for rural welfare in certain select villages and directed the various development departments to devote special attention to these selected villages.

Under this new scheme, the responsibility for the development of the selected villages devolves on the Deputy Commissioner, subject to the instructions of the Revenue Commissioner and Government and the advice of the Heads of the Development Departments. In order to assist the Deputy Commissioner in this work, an Advisory Committee consisting of the Revenue Sub-Division Officer (as Organiser and Convenor) and the local officers of the several Development Departments in the District has been constituted. The members of the Committee tour in the selected villages once a quarter, review the progress made and settle the lines of future work. Not less than half the grant made to each District under "Assignments to Village Panchayets" is earmarked for the improvement of the selected villages. The Deputy Commissioner submits to Government through the Revenue Commissioner a report on the progress of work done every half year. An illustrative list of works has been suggested for adoption by the several Development Departments.

The scheme has been in operation for about four years in 258 villages (including a few Banajara tandas) and the efforts of the local officers have met with enthusiastic response from the people. Satisfactory drainage and adequate facilities for drinking water for men and cattle, adoption of better and improved methods of agriculture, opening of adult night schools for men and women, development of cottage industries like coir-rope twisting, shoe-making, soap-making, and mat-weaving and other improvements calculated to make the villagers happy and contented, are some of the beneficial measures that have been undertaken in the selected villages.

Rural Reconstruction Centre at Dodballapur

In the year 1934, the National Council of the Y. M. C. A. in India opened a Rural Reconstruction Centre in Dodballapur, with the aid of a subsidy of Rs. 4,000 a year from Government for a period of five years and with permission to utilise for the purpose the buildings which previously belonged to the "Heart of India Mission." The whole of the initial expenditure of Rs. 10,425 was also met by Government. The period of five years having expired by 1st October 1939, the Centre was taken over under Government management. A Committee consisting of officers and non-official gentlemen with the Revenue Commissioner as Chairman, has been constituted to guide and control the policy and activities of the Centre.

Rural Health Centre at Closepet

A Rural Health Centre has been established at Closepet in co-operation with the Rockfeller Foundation just to serve as a Model Unit of efficient Rural Health Service and as a training ground for the personnel of the Health Department. The activities of the Centre extend to 135 villages covering an area of 113 square miles containing a population of over 50,000.

Rural Welfare Centre at Closepet

With a view to see that the other aspects of rural improvement also receive a special degree of attention in this area side by side with the activities of the Health Centre, Government established a Rural Welfare Centre at Closepet. The object of the Centre is to carry out intensive work to improve the existing conditions of rural life and economy by concentrating attention in groups of villages. The operation of this Centre extends over the villages included in the area served by the Rural Health Unit at Closepet. The activities of the Centre are guided and controlled by a Committee of Manage-

ment consisting of officials and non-officials with the Revenue Commissioner as Chairman. The Centre is under the direct charge of the Revenue Sub-Division Officer, Closepet, assisted by an Officer of the status of a Deputy Amildar.

Depressed Classes

The problem of improving the economic, moral and educational conditions of the Depressed Classes has been engaging the earnest attention of Government from a long time. As early as 1926, the Registrar of Co-operative Societies was appointed as a Special Officer for the Depressed Classes. But as most of this work as for example, housing, relief of indebtedness, formation of agricultural colonies and the like, has to be carried on by the Village Panchayets, the Municipalities and the Revenue Officers and as the Revenue Commissioner is the head of the Revenue Department and the chief controlling authority in respect of the administration of Village Panchayets, Government have since entrusted this work to the Revenue Department and have appointed the Revenue Commissioner as the Special Officer for the Depressed Classes.

A Depressed Class Advisory Committee consisting of officials and non-officials with the Director of Public Instruction as Chairman has been constituted, to suggest measures for the improvement of the Depressed Class Education. The Committee meets twice a year and has been doing useful work in collaboration with the Department. A special Committee consisting of officials and non-officials with the Revenue Commissioner as Chairman has also been constituted to consider measures necessary for the economic, social and other advancement of the Depressed Classes. The Committee meets twice a year and reviews the various measures undertaken to improve the social and economic condition of the members of this community. Government have also ordered the formation of Taluk committees to devise measures for the advancement of Depressed Classes.

Drinking Water Wells in Villages

There is no Governmental activity which concerns the life of the people so intimately as the provision of drinking water wells in villages. Before the itntroduction of the Village Panchayet Act of 1926 he duty of providing facilities for drinking water, in the rural parts rested on the District Boards but since then it has devolved on the Village Panchayets. It has always been the policy of Government to make substantial contributions to supplement the efforts of the local bodies for the solution of this most pressing problem of the country-side.

With a view to see that the work already undertaken in this respect is accelerated, and brought to completion as early as possible and to meet the needs of the remaining villages within a definite period, Government in their Order No. L. 9479-99—V.P. 63-36-27, dated 23rd May 1938 decided to allot a sum of fifteen lakhs of rupees for this purpose to be spent during the course of five years beginning from the year 1938-39. A fund called the "Rural Water Supply Fund" has been constituted in each District which is made up of the Government grant sanctioned to each District, the contributions received from local bodies and private people. No distinction is made between District Board wells and Village Panchayet wells and all wells are financed from this common fund of the District. The administration of the fund is vested in a Committee consisting of the Deputy Commissioner, the Executive Engineer, the President, District Board, and two or three representatives of Village Panchayets nominated by the Deputy Commissioner. The Deputy Commissioner is the Chairman of the Committee and has been authorised to approve of estimates pending sanction of the Committee and generally to watch and direct the progress of work in the District. The appointment of a Sub-Overseer in each Revenue Sub-Division has been sanctioned for the supervision of well works in the Sub-Division as a basic scale, the staff being strengthened wherever necessary. As far as possible, no well work will be sanctioned unless the villagers or the local bodies concerned contribute half the cost; but in exceptional cases where owing to the poverty of the population or other sufficient cause (such as, the well-being required for the benefit of the Depressed Classes) the entire amount of contribution cannot be raised, discretion has been given to the Deputy Commissioner to relax that condition.

MYSORE EXPERIMENT IN UNIVERSITY EXTENSION WORK

By. G. Hanumantha Rao, M.A.

General Editor, The University Extension Lectures Handbooks, Mysore.

MYSORE has become famous for its many works—hydraulic and electrical, industrial and artistic. Latterly, its university extension work has begun to attract the attention of persons in and outside India. Visitors to Mysore have called at the University seeking information about it, and letters of request for details about it are being continually received. Opportunity is here taken to give persons interested in it some idea of the efforts that are being made by the University to carry knowledge to the doors of the people.

Universities, in the West, have risen in response to social needs and have prospered by fulfilling them. In India, unfortunately, this has not been so. While the Universities of India resemble those of the West from syllabi to seating arrangements, they differ from them in one vital point. Elsewhere, the language of the University is also the language of the people; in India, the language of the University is a language which ninety-nine persons out of a hundred cannot understand. The result is that University knowledge has become sacred and esoteric, available only to the initiated, and University teachers tend to become strangers in the society in which they live and work.

The younger Universities have become conscious of this anomaly and are now striving to set it right. The University of Mysore has initiated an interesting experiment in this direction. Though it has not been able to go to the length of imparting all its instruction through the language of the people, yet it has tried, from its very inception, to give it a prominent place in its scheme of studies and publications. Many Kannada classics have been edited, several scholarly books have been published on diverse subjects, literary, social and scientific, and a Kannada quarterly maintained by the University ranks high among periodicals in the language. About eight years ago, the University definitely resolved that its extension lectures should, ordinarily, be delivered in Kannada. Since then, they have been delivered in that language except, occasionally, when eminent non-Kannadigas are invited to lecture. This important and progessive step taken by the Mysore University, has gone a long way in realising the ideal set before it by His late Highness Sri Krishnarajendra Wadiyar at its inception. "It is to the remote parts of the State which have not the educational advantages of our two capitals that we should specially direct our efforts to introduce a higher standard of culture and education."

"Our University will also be engaged in diffusing knowledge among that section of my people who, for various reasons, may not be able to participate in the courses and discipline appointed for the regular examinations. It is with this object that the scheme provides for the establishment of extension and publication departments. I trust that the University will soon be able to develop fully this side of its activities with due regard to the practical needs of the country."

Among Indian Universities, Mysore University has been the first not only in carrying on its extension work through the language of the country, but also in devising a new technique of extension work and in securing the assistance of University teachers to do it by means of an organisation of their own, the University Teachers' Association. When this scheme was described by its President, Principal J. C. Rollo, at the International Universities Conference held at Oxford in 1934, it was hailed as the 'Mysore Experiment,' for, nothing like it was truly to be found anywhere else.

There are several distinctive features of the Mysore Scheme. The first and the most important is that this work done by the University teachers is voluntary, honorary and unofficial. There was a time when extension lectures were paid for, sometimes in hundreds of rupees, but to-day not an anna is paid as remuneration to the lecturer. The expenditure is mostly on the travelling expenses of the lecturers, and, when the journey is undertaken on behalf of the University Teachers' Association,

the lecturer receives less than he is entitled to receive: there have even been cases of lecturers who have travelled at their own cost. A tradition has been established in Mysore that lecturing to the people must be a labour of love. This has earned from the Secretary of the International Universities Conference the following tribute "..... ..... the voluntary work done by the staff of the Mysore University is a remarkable example of the devotion and energy which characterises this infant adult educational movement in the East." *

Another special feature of the scheme is the co-operation that it has secured from local bodies like Karnataka Sanghas and Municipalities. Besides making all arrangements for the lectures, they make monetary contributions. Originally, the local bodies were required to subscribe substantially, sometimes as much as two hundred rupees, towards a camp; of late, this is not being insisted upon. The local bodies now voluntarily contribute a small amount as a token of goodwill.

A third distinctive feature of the scheme is that it is an open and a growing one. No attempt was made to draw up a scheme perfect in every detail to start with. Some basic ideas were taken as working hypotheses to be modified, altered and elaborated in the light of their actual working. The scheme is essentially evolutionary, older forms continuing to work and newer ones coming into existence as circumstances demand. There is not just one set or dead type; lecture types are varied and varying: there are single lectures, lecture-series, lectures on one day, on three consecutive days, for a whole week running, or on two consecutive days at successive week-ends. Single lectures are arranged by the University directly on the recommendation of a Committee appointed by it for the purpose. Collective lectures are organised by the University Teachers' Association in Mysore and its branch at Bangalore. Lecturers go in groups and camp in a place for the entire period of lectures and establish living contact with the people. Principal Rollo who is the President of the Association is also the Chairman of the Extension Lectures Committee, thus representing in his person the unity in diversity characteristic of extension work in Mysore.

Lecture-series organised by this Association were originally styled Upanyasa Saptahas (lecture weeks) but they are now known by a more general and poetic name, Upanyasamale (garland of lectures). Formerly, they used to be spread over a whole week. But experience has shown that a week's duration is too much for certain places, especially for those visited for a second or third time. For other purposes, as for example when intensive lecturing is to be done on three or four subjects at the same place, a week's duration is too small: several week-end camps are necessary. Thus, there are at present three types of Lecture Camps: Week Camps, Intensive Camps (also called Local Camps) and Follow-on Camps.

Week Camps, as the name indicates, last for a week. They are generally held in the bigger towns. Every evening a two-hour programme is arranged. It consists of three items—a reading from some great literary work in Sanskrit or Kannada, a lecture on a social science and another on a physical or natural science. A time limit of forty minutes for each item is strictly but subtly enforced. The programme generally starts with a reading and closes with a lantern lecture. Quite recently, the University has enabled the Association to equip itself with a battery-operated radio receiver and a battery-operated film projector. The former is tuned in about half an hour before the formal programme commences, and the latter is worked to run films at the end of the programme. These, incidentally, serve the purpose of assembling the audience well in time and of retaining them for the full span of two hours and even after. It was with a Week Camp that the Mysore Experiment began at Hassan in 1933; since then two such camps have been held in the bigger towns every year.

Intensive Camps are held only in places accessible from Bangalore and Mysore by train, car or bus in two hours or less. Six week-end visits are made, each lasting for two days. Four or five subjects are selected for treatment in a series of lectures which are required to be written out for publication. Such camps were devised two years ago and have already been held in four places. Two more are to be held this year.

Follow-on Camps are intended to follow up the extension work begun in previous years. Ordinarily, they last for three days. There is no difference between the programme of the Follow-on Camp and that of the other camps except that the former includes only single lectures on particular subjects. These camps have been held in all the bigger towns of the State and in some smaller ones like Doddballapur, Tiptur and Madhugiri.

*The Universities Review, Vol. 7, Page 39.

There is also a scheme to hold regular extension classes for adults who desire to study a subject more academically. They are to undergo a theoretical and, in the case of science subjects, also a practical course, extending over six weeks, at the end of which they are to be examined. Certificates are to be issued on the results of the examination. This scheme has not yet materialised.

The latest development in University Extension Work, initiated and promoted by Vice-Chancellor *Rajakaryapravina* N. S. Subba Rao, is the publication of the lectures in the form of handbooks. Begun only in March 1939, the scheme has grown quite rapidly. Within the span of a year and a half nineteen books have been published, and ten more are due to be published by the end of June 1941. They cover a wide range of subjects as the following titles indicate: Introduction to Astronomy, Social Pathology, Taxation, Precious Stones, Our Villages, Kumaravyasa, Harihara, Kannada Literature, Electricity, Animal Life, Pampa, Marriage, Dreams, Our Economic Outlook, Light, Kannada Kadambari, The poems of Kalidasa, The Constitutional Development of England.

These handbooks have become quite popular; about fifteen thousand copies have been sold in the course of a year. They have earned encomiums from many quarters. A few representative extracts are given below.

Amin-ul-mulk Sir Mirza M. Ismail, K.C.I.E., O.B.E., *Dewan of Mysore*.—"I commend the idea of the University in giving thus a permanent form to the extension lectures delivered by the members of the University on subjects in which the public at large are so deeply interested.

"I think that both the scheme of extension lectures and the publication of such handbooks are steps in the direction of achieving the two-fold objective which His Highness the Chancellor placed before the University at its inception. I should like to congratulate the University most warmly upon its enterprise."

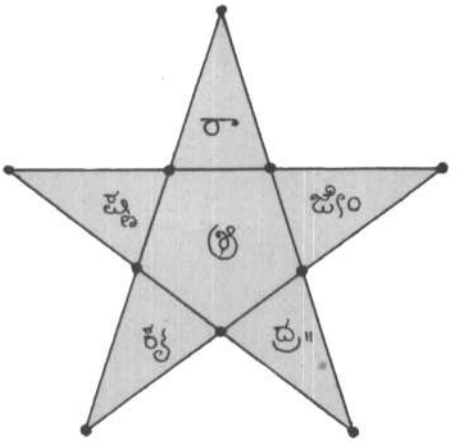
R. R. Diwakar, Esq., M.A., LL.B., *Trustee, The Samyuktakarnataka, Hubli.*—"I must congratulate you on having brought out such nice handbooks on interesting subjects. They are a marvel of cheapness and nothing more need be expected in good printing."

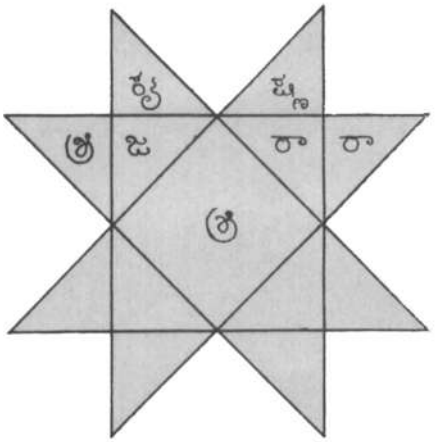
Mr. U. R. Acharya of the Madras University, who reviewed a book of this series in the HINDU of the 18th August, evaluates the importance of the series as follows:

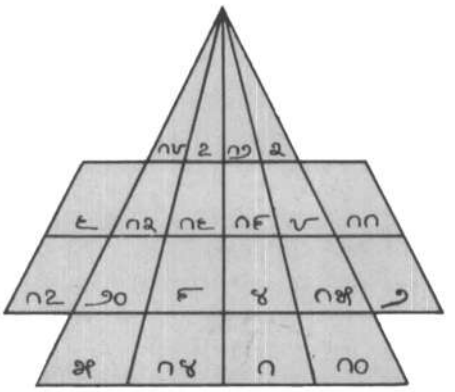
"This booklet on 'Light' forms the sixteenth number in the series which the Mysore University is publishing every month in Kannada on various branches of learning such as Literature, Politics, Economics and Physical Sciences. In making available, *to the lay public*, at the cheap price of two annas, small but learned treatises on various subjects by the specialist therein, the Mysore University sets an example of service such as the other South Indian Universities might seek to render in the Tamil, Telugu and Malayalam languages. The book under review is a worthy addition to the list of good books already in hand in this series."

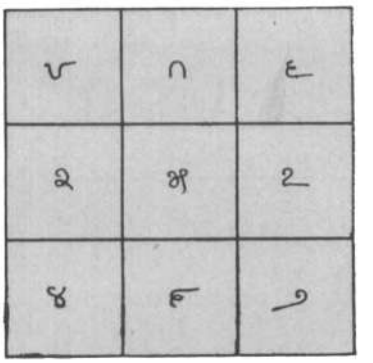
The idealism that has animated the newer developments of University Extension work in Mysore is but an expression of the innate idealism of the Mysorean; and the interest and sympathy evinced throughout by the University authorities have been mainly instrumental in eliciting it. When this blossoms fully the University of Mysore will figure as a great factor in the evolution of Greater Mysore.

MYSORE GANJEEP CARDS.









MYSORE PLAY-BOARDS.

MYSORE GAMES

By S. R. Sampathiengar, B.A., LL.B.,

Advocate, Mysore.

THE history of the origin of games is lost in obscurity and the few theories that are advanced are perplexing and contradictory. It is true, however, that informal play generally precedes games in which the players are required to observe certain rules and regulations.

While some look to religion for the origin of games such as those played in ancient Rome and Greece, there are others who look to the natural instincts of man for the origin of some of the most popular games like running, throwing and striking. Children's games are mostly notable imitations of the every day life at home and abroad. Marriage games are popular amongst all girls at all times and places. The folk dances representing Krishna's play of the lute amongst the gopis, the village harvest dances, and the kite dances, represent the religious, industrial, and social sides of life outside the home.

Games are not without utility to mankind. To get the best out of games, they should be cultivated and turned into habits in early life. Games bring out exercise, and develop certain fundamental physical, mental, moral and social traits of the person. Games should be suited to the individual and to his age, capable of developing his physical structure and the joyous mental exhilaration of living a "joyous life." Experts are agreed that muscular fatigue brings out mental fatigue and mental fatigue brings in its train loss of muscular power. Herbert Spencer defined that play represented the overflow of superfluous energy, required to maintain level of health and perform imposed tasks. Groos on the other hand held that play gave preparatory exercises in later necessary functions. Plato also discovered early the value of play in education and the necessity of the plays of children being such as to grow naturally and helpfully into the later more reflective and productive modes of behaviour. Modern educationists are of opinion that games rather develop a power to apply what one knows rather than give, comprehensive knowledge which may or may not be applied. On the moral side also, games develop such good traits as courage, fortitude, perseverance, fairness, generosity, loyalty, co-operation and sacrifice.

Games not only provide benefits to the players but also to the spectators who, genuinely participating in all the emotions and movements of the players, get a heightened colour, a deepened breathing, an accumulated heart beat, a joyous emotion stimulating the entire vaso-motor system. Scientists are agreed that an adult must at least spend five and half hours time for play, games and hobbies.

Most of the modern games are old games in new garbs. Culin asserts that no new game has been invented during the historic period; and that all we regard as new are modifications of games played before the building of the Egyptian pyramids.

The pagade (dice)play is still played in Mysore homes with the same set of rules observed by Pandavas and Nala when they staked their empires and their liberties on the throw of the dice.

In addition to the Kindergarten games, Mysore girls play still the age old games of *Datchi Bara* and other kindred backgammon games with cowries and pebble stones.

The Mysore boy still believes the bamboo stick as his most unruly horse and whips it as he runs past romping on the playfield.

Hilarious girls with their pig tails dangling indulge in the indigenous play of the blindman's buff in their homes singing quaint old songs and keeping time with their jingling anklets and bracelets.

The games of hide and seek amongst the cow herds indulged by God Krishna are still played by Mysore cow herd boys amongst the famous Amrit Mahal bred cows.

The Mysorean has not only battled with Nature for his existence and dammed rivers to irrigate his fields and harnessed waterfalls to produce power to work his factories but also has striven his utmost

to unravel the mysteries of life on the spiritual plane.

Problems of soul and relationship with God have baffled prince, peasant, and philosopher alike and the practical Mysorean with the mind of the westerner tries to understand its bearings by means of a foot-rule and a graph. He has invented games to illustrate the travails the soul undergoes to get communion with God. Deva Sayujya, Siva Sayujya, Vishnu Sayujya games show the long steep hill the soul has to climb to reach the Almighty.

Paramapada Sopana (steps to Final Beatitude) is another game popular in all South Indian Homes consisting of 132 squares containing pictures of the seven worlds and creation. The whole board is interspersed with long and short snakes and ladders. The ladder takes up the player to the heavenly abode from particular squares like knowledge, renunciation, faith, good character and sacrifice. The snake on the other hand hurls down the victim who reaches its head to its tail below, recalling to our minds the fall of Adam and Eve through the wiles of the serpant. The game is an object-lesson in spiritualism teaching the players the efficacy of the several kinds of Yoga to reach Final Beatitude and the several pit falls he has to avoid.

The pleasures of the card table were not unknown in ancient Mysore and a variety of card game known as Ganjeep with the circular discs made of paper or ivory and painted with gods, and goddesses and planetary deities on one side was played by the rulers and the aristocrats.

The play-cards were originally round and the difficulty of shuffling the circular discs led to the adoption of the rectangular Ganjeep cards. The entire Ganjeep cardpack consisted of picture cards and the numbers from ace to ten were singularly absent. Painted by local famous painters and exquisitely got up, unlike the paste boards of western production, each card is a work of art and is even now preserved as such with care and reverence in Mysore homes. Many of the cards depicting gods and goddesses are framed and hung in drawing rooms.

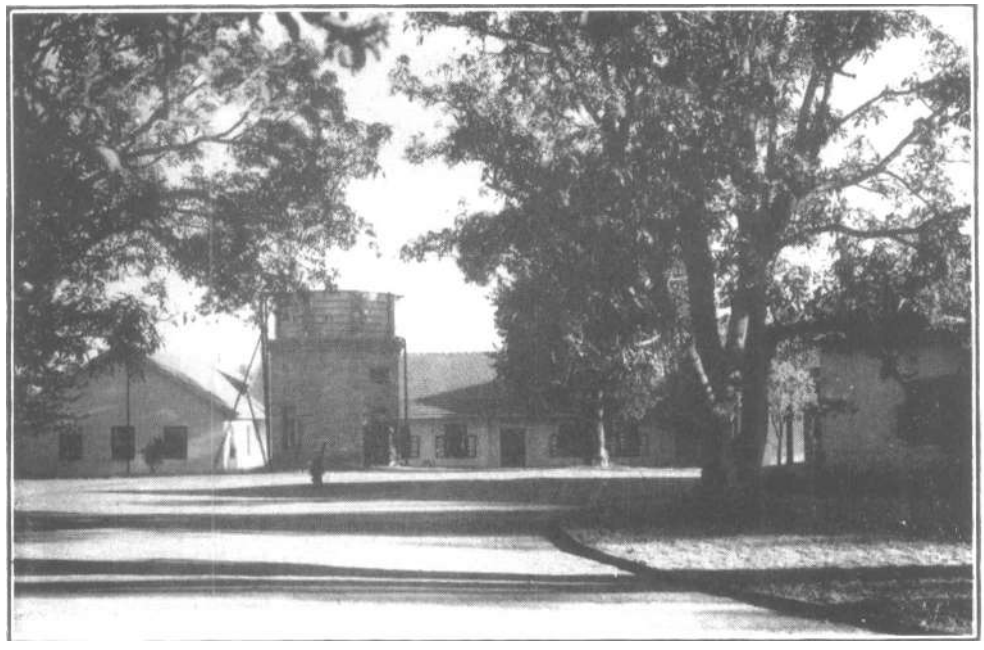
Mysore invented and added in the 19th century a few more games to the already varied and innumerable games in Ganjeep. The newly invented Ashta Aiswarya Ganjeep play consisted of 160 cards made up of Chamundeswari, Eswara, Vishnu, Brahma, Indra, Sun, Moon, Cupid, Nine Emperors, Seven Parrots, King, Queen, Chariot, Horse, Infantry, Flagstaff, the twelve Zodiacal signs, etc. It is a game for four players, the lead going to the player holding Chamundeswari. The parrot is then surrendered to the Devi. The emperors, etc., are then played for the subsequent tricks in order.

It is a sad reflection on our times that our Indian clubs do not patronise these indigenous games or even preserve them as curios in their shelves.

Indian Rajas have played chess with live damsels suitably dressed as Pieces and Pawns and played *Chaugan* or Polo at night with ignited balls of *palas* wood burning slowly. Domesticated and trained cheetahs have helped Indian Rajas to track down the antelope and the bison.

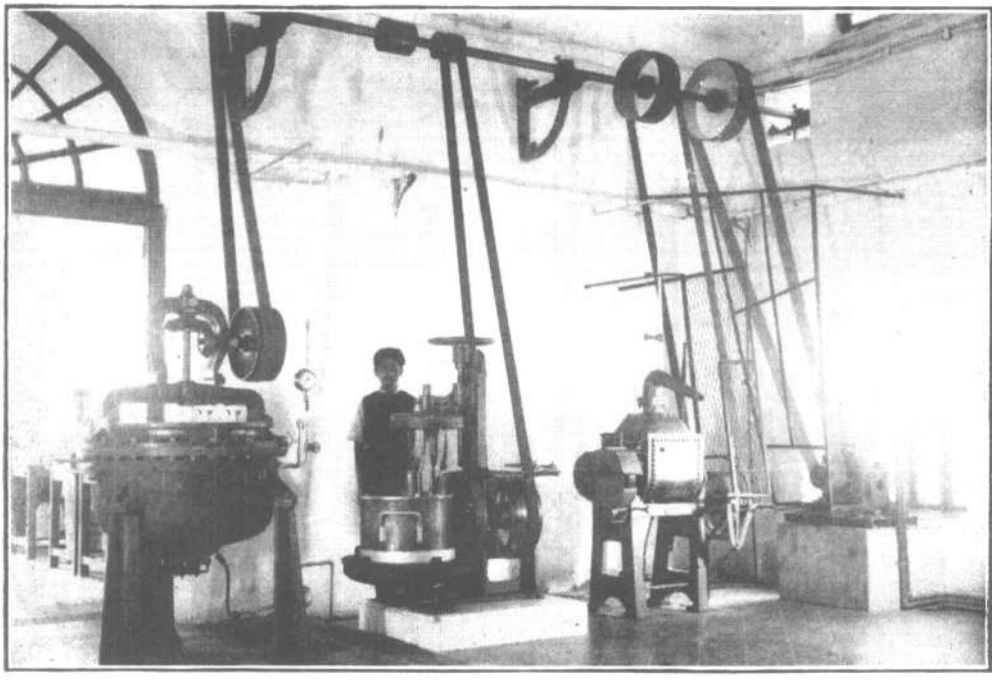
While Royalty sported in wild jungles in search of wild game—lesser folk with limited means played the Bagh-Bakri game on a wooden board at home.

Loyalty to the king, is no mere lip service to the Mysorean. It runs in his veins and finds expression in all his deeds and games he plays. The name of the Ruler whom he adores and speaks with bated breath he employs lovingly in the games he plays. The name of Sri Krishna Raja is reverently and endearingly traced on the play board recalling every minute of his play time the Ruler under whose benign rule he lived so happily.

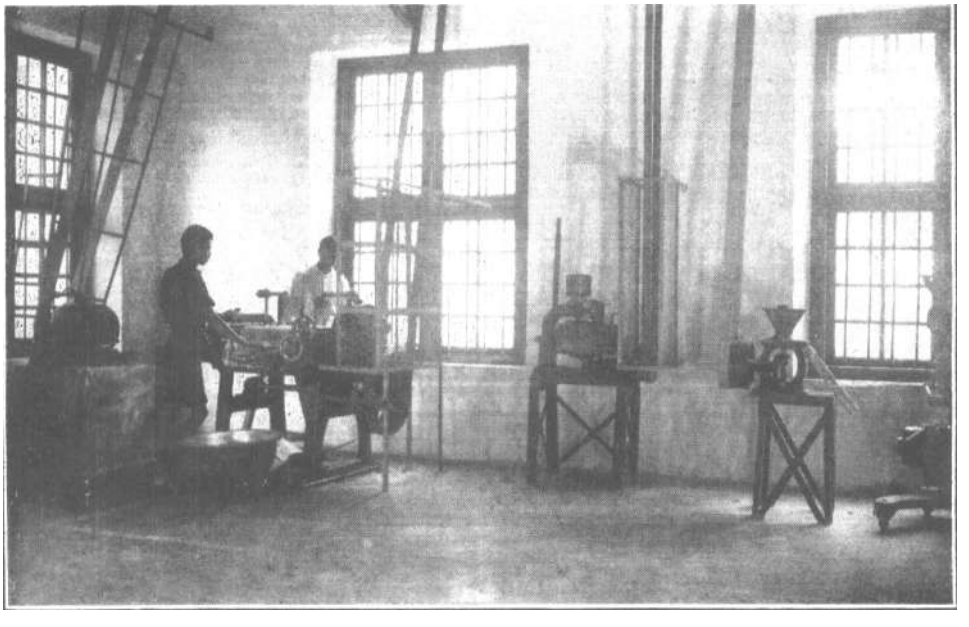


THE GOVERNMENT INDUSTRIAL AND TESTING LABORATORY.

A CORNER OF THE TABLET-MAKING SECTION.



A CORNER OF THE MANUFACTORY.



MIXING AND GRINDING MACHINES.

RURAL DEVELOPMENT IN MYSORE

D. KRISHNA IYENGAR, M.A., F.R.ECON.S.,

Sub-Registrar, Krishnarajanagar.

THE primary want of man is food and this mainly comes out of soil and water. The study of man's efforts to increase the production of such a necessity as food is one of the subject matters of rural development. An individual always gets something in return for his labour on land. Not only does he get something, but enriches the world by exhibiting productive and improved methods of cultivation, by which others get better yield from land. Farming has become one of the most important industries in all civilized countries of the world and so also in Mysore.

The problem of agricultural development and economic reconstruction form the chief subjects of rural development. It is so complex that no single solution is enough to relieve the difficulties of rural parts and improve their conditions. What is most urgent is, to show to the rural people the exact condition of their farms; what is amiss as things stand;-and how to rectify them? They must be taught how to get more income, how to feed their cattle profitably, and how to improve the quality of land by scientific methods. To start with enlightenment and education are the two most important factors to be undertaken.

Mysore is one of the most advanced States in India. It has earned a world-wide reputation. The progress achieved in Mysore, during the last quarter of a century is phenominal. This all-round progress is mainly due to the constitutional policy of the Government, pursued in matters affecting the well-being of the rural people. Mysore is closely following the good policy of Gladstone that "Good finance consists more in the spending than in the collecting of revenues."

The example of Mysore for promoting the moral and economic condition of its people is unparalleled in the whole of India. The result achieved in every branch of the machinery of the Government is greater in proportion than what has been achieved in any other part of India. As such, this brief survey will not be impressive without a reference to the advancement made in agriculture, education, health and sanitation, cottage industries, and co-operation in Mysore. The measures followed here would certainly serve as guidance to other parts of India.

The main occupation of the people of Mysore is agriculture, and more than 80 per cent of her total population live on it. The important agricultural crops are paddy, ragi, jola, pulses and oil-seeds. The commercial crops such as sugarcane, coffee, arecanut, groundnut and mulberry are grown in abundance. The agricultural policy of the Government is two-fold—propaganda and scientific research. Several problems pertaining to agriculture have been carefully solved in the well equipped laboratories and the results are first brought into operation in the several agricultural farms maintained by the Government.

There are more than 25 such experimental farms for different crops in all parts of the State, under the direct management of the Agricultural Department, where investigations and practical research are carried out on crops best suited to that particular area. Demonstration and intensive propaganda are carried out through lectures, pamphlets, charts and exhibitions. The devices and the instruments used along with the chemicals to extirpate the diseases of crops are very widely made known for free and effective use of the raiyats in rural parts.

The principal work of the Botanical section of the agricultural department is to produce better varieties of crops, than those that are existing at present. The policy followed here is three-fold: firstly, to introduce new varieties from other countries and testing them against the existing types for yield and quality; secondly, to select promising plants among local varieties and lastly to hybridize and build up new types.

The most important line of work is the preparation and supply of manurial requirements of various

important crops. A large number of demonstration farms in paddy, ragi, sugarcane and coffee have been set up for the use of rural people in different parts of the State, and the researches made in them are made widely known to the cultivators. The Department of Agriculture not only supplies manure to the raiyats on a large scale, but also keeps a large number of varieties of seedlings. The preparation of compost from cane trash and other rubbish is noteworthy. Thousands of tons of compost are being prepared in the State and made use of for sugarcane and other crops. A large number of improved tillage implements such as Mysore ploughs, threshing rollers, sugarcane mills and other appliances are being distributed among the villagers every year. "Mysore has got a very well organised Agricultural Department with good officers many, of them trained abroad, and on the whole the agricultural department here is one of which any British Indian Province may justly feel proud." This is the tribute paid by the Ex-Vice-President of the Imperial Council of Agricultural Research, after seeing the improvement in Mysore.

Mysore is the home of two best breeds of Indian cattle, "Amritmahal and Hallikar", and it has instituted the best cattle breeding stations. These breeds supply the best working bullocks for agricultural operations and also milch cows. The Amritmahal breeds have seen war services for centuries as transport animals. Thousands of bullocks have been transported to British India. Climatic and seasonal conditions in Mysore are very congenial for cattle rearing. The difficulty of fodder is overcome by the introduction of Napier grass, which is a very promising variety and which helps for collection of grass. This is wonderfully suited to conditions of village gomal lands. This is capable of supplying green fodder for nearly three-fourths of the period in a year. This grass may be grown in millions of acres which are left fallow in villages as gomal lands.

The outstanding feature of the research section of the Civil Veterinary Department of Mysore is the development of vaccines against Rabies in animals. This is of immense help to control effectively two of the most dreaded diseases—Rabies and Anthrax. The special features of improvement and care of live-stock in Mysore are, distribution of good breeding bulls to village panchayets and to cattle breeders at concession rates; supply of half-bred Merino rams to sheep farmers to improve the quality and quantity of fleece; supply of cocks and eggs of Leghorn, Rhode Island Red and other types of poultry to poultry farmers; and lastly control of cattle diseases by preventive inoculation and timely treatment of diseases.

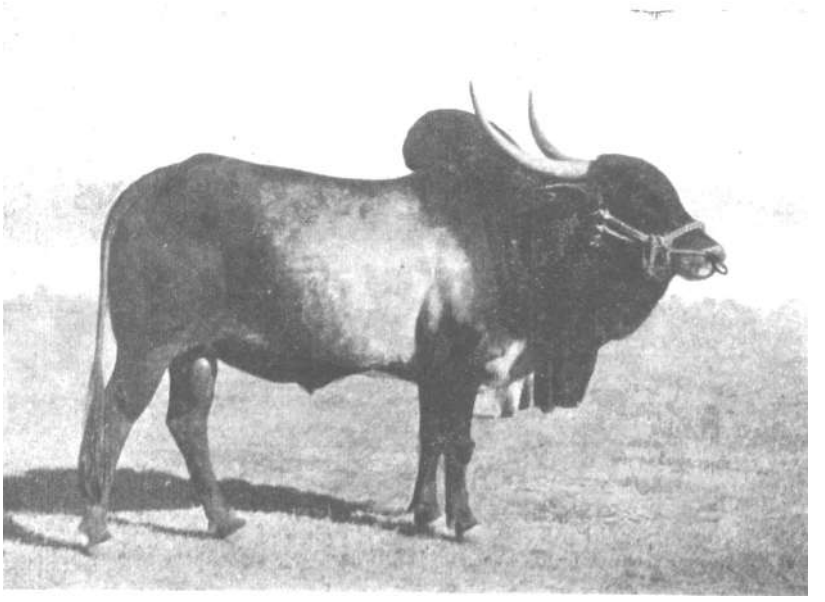
Adequate irrigational facilities constitute one of the remarkable items of agricultural improvement. Realising the importance of this, a large number of reservoirs and water tanks are being constructed by the Government. The total irrigated area under the channels, tanks and wells in Mysore is about eleven lakhs of acres, which works out to seventeen per cent of the net cropped area in the State. Some of the largest irrigational projects have been undertaken in Mysore. The Vanivilasasagara, the Chamarajasagara and the Krishnarajasagara are some of the great examples of irrigational works. Irwin Canal is a work of immense and lasting benefit to the State. It is a great project, not only dealing with engineering details, but also of village expansions, extension of communications, experimentation of important crops and prevention of water-logging and malaria. This great irrigational scheme is going to produce great potential wealth in Mysore.

Space does not admit of a detailed reference to the many-sided economic activity of the agricultural department of the progressive State. Suffice it to say that "Agriculture has been nationalised and progress is the watchword. Mysore's development under the aegis is so analogous to Sweden's that it is far and away the best model for all authorities to copy."

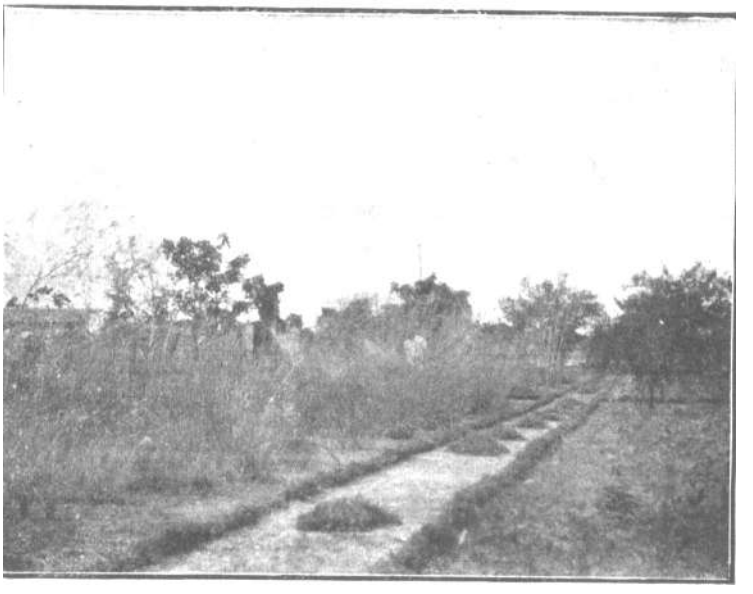
Education.

Vigorous attempts are being made as in other parts of India, to expand education both in quality and quantity in Mysore. "Education is the sovereign remedy for all economic evils. Much has been done by My government in recent years by giving increased grants and otherwise to spread knowledge and awaken intelligence of the people. To mark our sense of its importance we have given the subject of education the first place in the general programme." This is the observation of the most enlightened Ruler His Highness the late Maharaja of Mysore, regarding the educational ideals of the State. The Government have made primary and middle school education free. To make it available to all sections of people, scholarships, hostels and other facilities have been granted.

AN ARECA GARDEN ATTACKED BY ANABEROGA. INVESTIGATION AND CONTROL OF PLANT DISEASES IS AN IMPORTANT WORK OF THE AGRICULTURAL DEPARTMENT.



A TYPICAL AMRIT MAHAL STUD BULL.

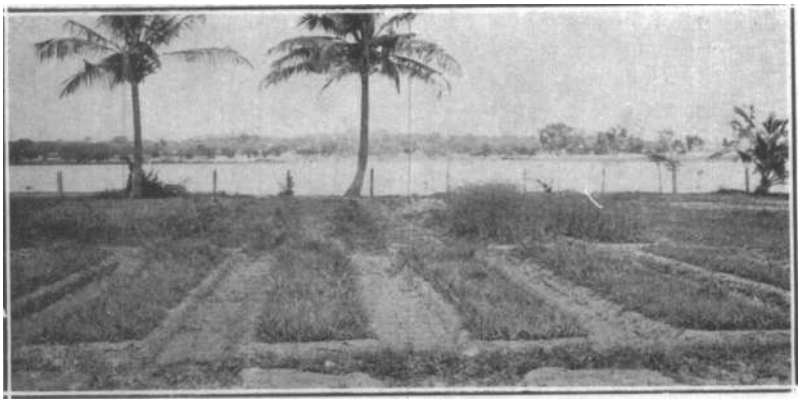


INDIGENOUS GRASS—STUDY PLOT, HEBBAL FARM.

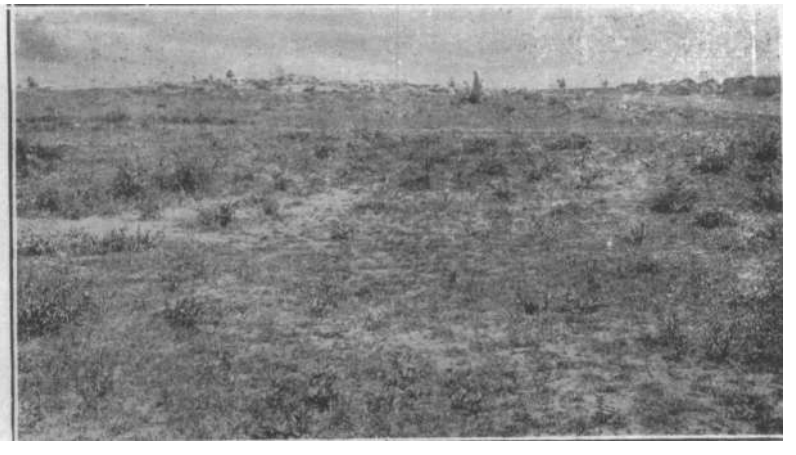
K1. RAGI—GROWN ON AN ESTATE AT HUNSUR.

SUGAR CANE: H. M. 661 AND C. O. 419—SHOWING GREATER VIGOUR OF H. M. 661.

DEMONSTRATION PLOT OF M. A. II COTTON AT NELAMANGALA.



NURSERY OF DRYLAND THIN NAPIER GRASS, HEBBAL FARM.



UNPRODUCTIVE NEGLECTED GOMAL LAND, HEBBAL FARM.

IMPROVED GOMAL LAND AFTER PLANTING WITH DRYLAND THIN NAPIER GRASS (NOTE THE LUXURIANT GROWTH OF GRASS.)

One of the principal aims of education is to prepare the majority of the educated children for one or the other occupation. As such, Mysore like other leading countries of the world is very much interested in the problem of unemployment. To improve the situation and to provide facilities for employment, the Government have reorganised the school final course, introducing technical and commercial courses of study.

It has been the aim of the Government in Mysore to provide every village with a school. Nearly one-third of the population of school-going age is under instruction. The Compulsory Education Act of 1913 and the Elementary Education Act of 1931 have helped a great deal for the spread of education. Eighty per cent of the total cost of education is met by the Government. No other Indian Province is spending so much money on education. The problem of adult education, children's education, vocational education and physical education have all been tackled successfully in Mysore. It has its own anti-illiteracy campaign as other provinces. The University has released a number of enthusiasts who are doing social work. A few hours under the influence of such men, the raiyat emerges a literate, with a will and a taste for reading. This planned attack on illiteracy has its acknowledged place in Mysore.

The Simon Commission has remarked : "The whole texture and strength of the national life are largely dependent on the contribution which women make to it alike, for training and instruction of the young and for the readjustment of the Indian social system. The Indian woman is pivotal." Realising the importance of such a system of education. Mysore has become a pioneer in extending the number of schools for girls. The Government have been trying to raise the quality of life and level of culture among women. The day may not be far off when every one in a community will pass through the portals of our schools in the country.

Health and Sanitation

The Government of Mysore have arranged for regular periodical visits of medical and health officers to important villages. A large number of village panchayets are availing themselves of this well planned scheme. Under the new scheme several dispensaries have been opened at the cost of Government. Another plan of great utility to remote villages is that of subsidised practitioners in rural areas, which aim at giving facilities to qualified unemployed medical men apart from other curative aspects of diseases. Systematic instructions have been issued to medical and health officers, to take more interest in sanitation in villages and to educate the villagers in matters of health and hygiene.

Malaria is one of the important diseases that claims a heavy toll of human life in rural parts. It is estimated that fifty thousand people die out of malaria every year. Malaria is caused by the bite of an infected female anopheline musquito. One of the important preventive measures is to control the breeding of this variety and to attack the musquito larvæ in their breeding places. Apart from the effective way of control, special dispensaries have been set up in several villages for the distribution of medicines and to give instructions to combat malaria. Malaria Research Stations have been established, with a view to finding out an effective way of eradicating this disease. In the same way great care is taken by the Public Health Laboratory to prepare lymph to control several other diseases.

In Mysore " Hospitals will no longer be regarded as places where people go to die, but where people go to gain better health for the enjoyment of life and the more efficient performance of their normal work. The Government have in view a broad State-minded health programme to include more effective measures for the protection of health of mothers and children ; the organisation of comprehensive efforts to cope with those prevalent causes of diseases and death for which science has given us weapons of unquestioned power ; the provision of additional hospitals, sanatoria, health centres and other medical facilities which are necessary and now are lacking in many areas ; and better medical services for the poor and those who have to rely on State assistance for medical relief." This is the sentiment expressed by the most far-sighted and sympathetic statesman, Sir Mirza M. Ismail. Mysore is in the forefront in medical relief and it owns the most up-to-date and largest hospitals in India.

Rural Health and Study Centres have been established in co-operation with the Rockefeller Foundation for intensive rural health work. The activities of the Rural Health and Welfare Centre at Closepet have been extended to hundreds of villages, and are guided and controlled by a

committee of management. With a view to securing rural improvement, the centre has been carrying on effective work in village surveys, communications, sanitation and health, agriculture and education. So also the Rural Reconstruction Centre at Dodballapur is doing very good work, helpful to rural development. It is training hundreds of village officers and other enthusiasts interested in rural uplift work. It is giving theoretical and practical lessons to students on some of the most important subjects such as—principles and methods of rural reconstruction, village health and sanitation, elementary agriculture, common ailments of live-stock and their treatment, scientific bee-keeping, poultry farming, maternity and child welfare, adult education and several other subjects on cottage industries.

Cottage Industries

The Government of Mysore had inaugurated the Mysore Economic Conference with a view to bring about an improvement in the economic conditions of the people in all directions. The Department of Industries and Commerce has been constituted to stimulate private industrial enterprise and private initiative. This was the first of its kind in India. The Board of Industries and Commerce is also created to ensure continuous attention to the growth of industry and trade in the State. All these organisations are trying vigorously to improve the existing rural and cottage industries, such as handloom weaving in cotton, silk and wool, silk worm-rearing and silk-reeling, mat-making, wood-carving and several others. All available rural facilities and resources are being utilised for the economic improvement of villages.

The Chamarajendra Technical Institute of Mysore, and the Sri Krishnarajendra Technological Institute at Bangalore have been imparting practical training in arts and crafts. They also give vocational instruction. Besides there are several industrial schools in all parts of the State giving useful training in carpentry, smithy, metal work, lacquer works, weaving and wood-carving. Surveys of existing cottage industries in several villages have been undertaken by the Department of Industries which carries on regular propaganda and publicity. Several pamphlets have been issued in respect of important cottage industries.

Hand spinning and weaving is one of the most important industries, that is growing in rural parts. Centres of weaving have been set up in several villages to show to the agriculturists that it will well serve as a subsidiary occupation. There are also other industries such as pottery, black smithy, leather and metal works, jewellery and oil-pressing. All these provide employment to nearly a lakh of families. Rope and toy making, rattan and carpentry, tailoring and embroidery are also prospering well.

Every attempt is being made by the Government to improve the industrial situation of village parts by reviving many small industries, and by creating and encouraging several others such as bee-keeping, poultry-farming, sheep rearing and fruit growing. A scheme of research to improve these occupations has been going on with the help of the Imperial Council of Agricultural Research. For the development of cottage industries, Government patronage is indispensable. This important factor is supplied to a very great extent by the Government of Mysore, by creating marketing facilities for sale and manufacture of articles, by giving subventions, and by purchasing articles. "Mysore's record in the encouragement of cottage industries and small handicrafts bears comparison with that of any part of India. With the narrow limits in which it can operate, it has done much to develop the resources of the State. No other part of India can show more solid and lasting work for its people."

"With commendable shrewdness and foresight, Mysore has launched on a bold and consistent policy of industrial development which alone can bring about its economic salvation. Here is an interesting example of a paternal government fighting the poverty of its people, not so much through social and economic legislation but by directly putting its own shoulders to the wheel, and with initiative, courage and confidence steadily pursuing its industrial policy, which has more than justified itself by the results."

Co-operation

The importance of co-operation is well emphasised by a separate department instituted for the purpose. Mysore has made a great drive forward in credit co-operation. The movement was started 35 years ago and the progress so far achieved is found to be satisfactory. Varieties of co-operative institutions have sprung up. Raiffeisen types of banks are attempting to help the agriculturists. Schulze Delitzsch and Luzetti's types are helping the traders

and manufacturers mostly in towns. Mysore is the pioneer in starting house building co-operative societies and they are doing very good work.

The policy and the intention of the co-operative movement in Mysore has always been to provide relief to the rural people by increased facilities of credit and by improving the repaying capacity of the cultivators. The Government have kept this in view and have introduced comprehensive schemes to strengthen the agricultural resources through co-operation. As a result, the Central Land Mortgage Bank and Apex Bank, have been started as the chief financing agencies to the rural co-operative organisations.

The Co-operative Department is spreading the movement in rural parts and making these institutions as real balancing centres. Refresher courses and training classes are being held under the supervision of able and learned co-operators. Weeding out bad societies, introducing a better system of supervision and audit and making necessary changes in the governing laws of the societies, are some of the problems to which the Department is devoting its attention. As a "cradle of co-operation in India" Mysore has a bright and glorious future. In the words of our gracious and benevolent Ruler "Co-operation is another word for brotherhood, and brotherhood is the index of character and basis of nationhood. There is therefore, one simple way to make Mysore great and that is, to let the spirit of co-operation permeate every activity of its people."

Rural Development in Mysore is great and this greatness is due to the vigorous and well-suited policy of the Government. This kind of economic plan, which is so popular in some western countries is bringing about good progress here. "The welfare of the raiyats has always been the first consideration of the Government, and there has been important developments in rural reconstruction. After years of endeavour to do something in every village, we have now concentrated on an attempt to do more or less everything in some villages." This is the observation made by the popular and enlightened Dewan of Mysore, whose sole aim is to improve the economic condition of the rural people.

An organised system of rural development scheme has been taken up by the Government and the Village Panchayets have rightly been chosen as the agency through which reconstruction measures are put through. More than 230 villages have been selected in all parts of the State, to carry on development work. People in many villages have come forward to contribute labour to a very great extent in making roads, drains and to make the general appearance of the village neat and tidy. An all-round development has been proposed to be introduced into these villages. The department of agriculture is making intensive efforts to improve the quality and quantity of raw materials and the Department of Industries and Commerce is putting forth plans for the profitable utilisation of these raw materials and for the sale of finished articles. So also, the financial help is created at low interest, while the Electric Department supplies power cheaply to productive works. A healthy co-operation of the activities of these various departments of Mysore is well reflected in the rapid expansion of rural development.

The advancement of rural development is mainly due to the devoted interest of the august and most enlightened Ruler, His Highness the late Maharaja of Mysore. The greatness and the usefulness of the administration of Mysore are very well seen in his gracious Silver Jubilee message to the people wherein he said, "I thank God, who has blessed Mysore so abundantly in material ways, that He has also blessed with a modest liberal minded, industrious people...I pray that we may all be assisted in the years to come to work together in a spirit of brotherhood for the same good and so that with an efficient administration increased facilities for agriculture, industry and commerce and equal opportunities for all we may devote our common energies in raising Mysore to a level with the foremost countries of the world."

Rural Development is one of the most important and pressing problems before the Government of Mysore, because the raiyats form the vast majority of the population living in villages. It is in villages that real Indian culture still persists to live. It is there that one comes into contact with typical Indian village life. In fact the villages are the pulse of the country. This great principle has been very well realised by one of the greatest Indian statesman, Sir Mirza M. Ismail in whose words, "The real spirit of India dwells in villages. It is the poor struggling villager that is the real citizen of India. It is he who needs all the attention, all the encouragement, and all the protection, which an administration can bestow."

Thus, the wealth and welfare of the rural people has become the first consideration of the model State of Mysore. A sympathetic rural development work is being carried out and it is coming from within the villages rather than being forced from without. With a close co-operation of all the departments under the able guidance of the Government, there has been a marked improvement in the happiness and prosperity of the rural people of Mysore. Mysore is certainly going to be one of the foremost examples of rural development work in India, under the aegis of the most enlightened rule of His Highess Sri Jayachamaraja Wadiyar Bahadur.

[*For detailed plan of Rural Development work, please refer to "Raitana prapancha" written by the author of this article.*]

SHOW ROOMS AND SALES DEPOTS

THERE are at present, three Show Rooms at Bangalore, Bombay and Madras run by the Department of Industries and Commerce for the sale of Mysore products.

In spite of the set-back in trade in the Cantonment area due to war conditions the total sales effected at the Arts and Crafts Depot, Bangalore, amounted to Rs. 43,386 which is almost on par with those of the last year.

The total sales conducted by the Bombay Show Room, excluding soaps, amounted to Rs. 14,945, the wholesale disposal of soaps being of the value of Rs. 32,944. The sale of Mysore products at the Madras Depot amounted to Rs. 11,933.

The opening of a Show Room at Secunderabad has since been sanctioned and proposals in regard to the opening of a Depot at Tirupathi for the sale of Mysore products are under orders of Government.

WELL LAID OUT GARDENS IN BRINDAVAN.

GODDESS CAUVERY IN A NICHE ON THE WALL OF THE DAM AT KRISHNARAJ SAGAR.

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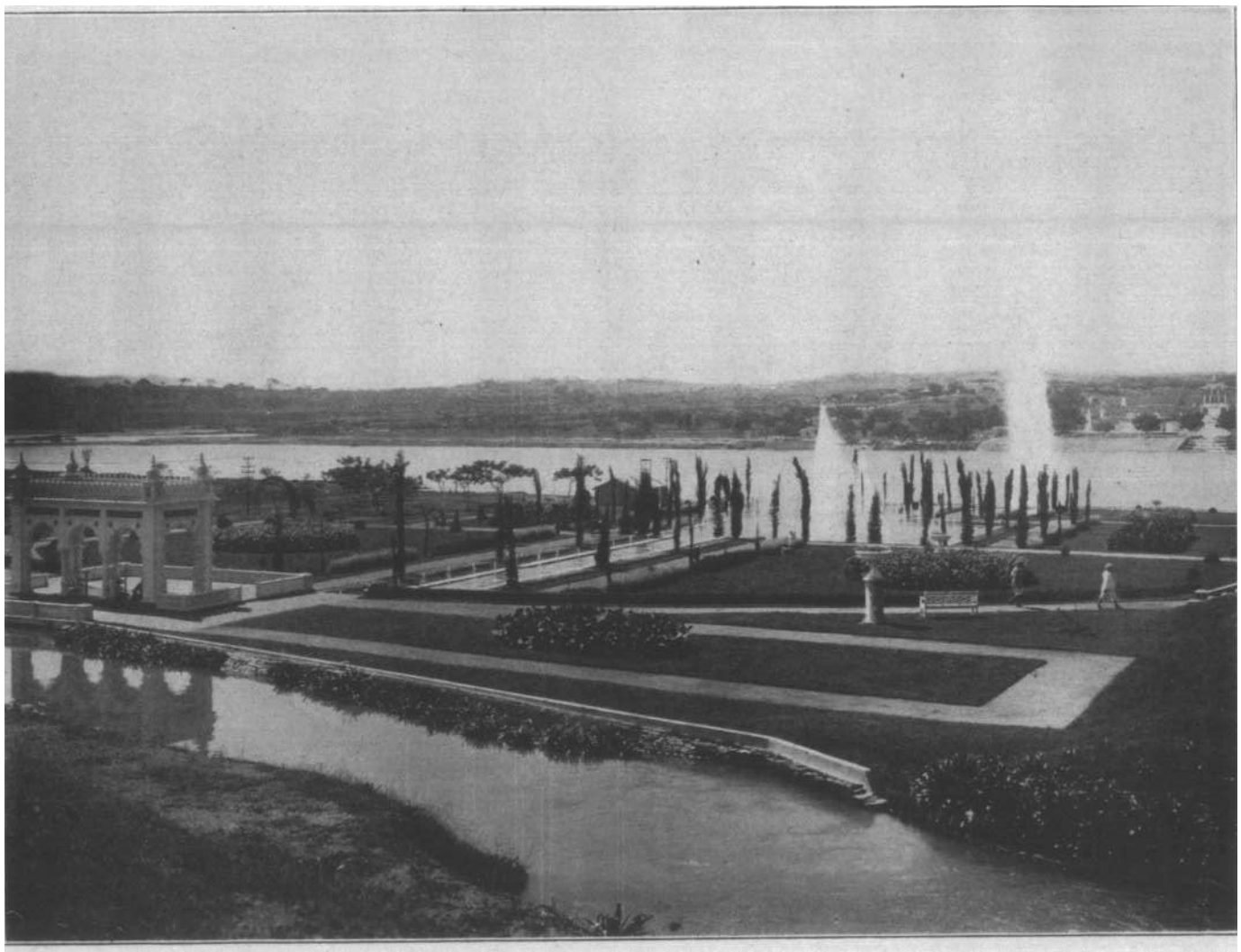
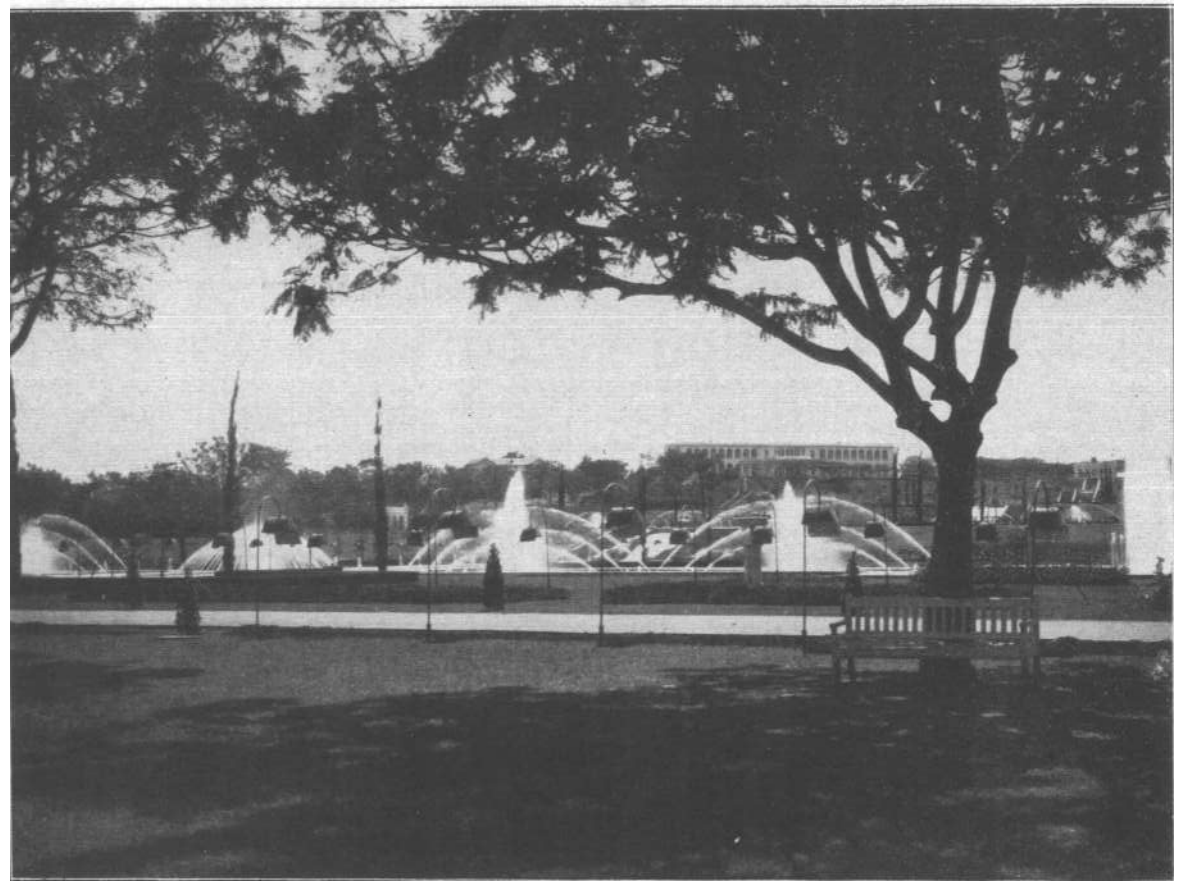


BRINDAVAN WITH THE HIGH PRESSURE FOUNTAIN IN THE SWIMMING POOL.



A SHADY RETREAT IN BRINDAVAN.

KRISHNARAJ SAGAR DAM AND THE IRWIN CANAL

Development of Irrigation

By N. Sarabhoja, L.C.E. M.I.E. (Ind.),

Chief Engineer in Mysore.

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Mysore is a table-land of about 29,500 square miles in area consisting of rocky hills and soft soil planes. This table-land generally slopes gently from the West to the East and is carved into innumerable valleys. The average rainfall in the State is about 36·12 inches. It is heaviest along the Ghat-head being about 300 inches annually and it gradually decreases to 25 inches below towards the eastern parts of the State called the *Maidan*. The insufficient and fluctuating rainfall in the *maidan* country and the porous nature of the soil have been the chief causes for the construction of numerous artificial tanks, large and small, across almost all the valleys at suitable sites. There is a large quantity of sub-soil water below these tanks and this water stored in underground reservoirs or wells is made use of for supplementing tank irrigation, systematically by water lifting appliances. But this method of irrigation, by wells is limited, its extensions being slow and uncertain. As the valleys formed by the natural steep slopes of the country are traversed by rivers, *anicuts* have been thrown across them and channels drawn for irrigation. Irrigation under these channels is only small as the area to be irrigated consists of narrow strips of land. Rainfall being the only source of water-supply, water has to be stored and conserved for irrigation during the monsoon by the construction of high masonry dams across rivers. Perennial and garden crops under *anicut* channels often suffer during some years from several disabilities.

The total area under irrigation in Mysore State under tanks, wells and *anicuts* is about a million acres. As all easy methods of irrigation from these sources have been exploited it was imperative to launch out fresh schemes of irrigation costing hundreds of lakhs of rupees on high masonry dams for conservation of flood waters in the rivers during monsoons.

The Krishnaraj Sagar Dam named so after our late beloved and august Sovereign and constructed across the river Cauvery at a distance of about 12 miles north-west of Mysore and nine miles from the historic town of Seringapatam, is the third largest irrigation project in India and the greatest of public works of importance in the State. Being the largest scheme ever attempted in India at the time, the Dam stands as a glorious monument to the credit of the Mysore Engineers, who undertook the pioneer venture by embarking boldly on this big scheme. The dam is 1¾ miles long and stores water to a depth of 124 feet of a maximum storage of about 44,000 M.C.ft. from the cill of the irrigation sluice. The maximum water spread area of the reservoir is nearly 50 square miles and the maximum length of the water-spread at maximum water level is about 25 miles. The vast expanse of water and the long picturesque Dam with the beautiful road way on top and the ornamental parapets with electric lights on either side present a gorgeous setting and a magnificent panoramic view. At the entrance to the Dam, there is an ornamental gateway so beautifully designed and constructed as to be in perfect unison with the magnificence of the Dam.

Object of the reservoir

The reservoir was constructed to serve two objects. Primarily, the first stage of the construction of the reservoir for impounding water to the level of 80 feet was secured to guarantee a continuous supply of water at Sivasamudram during hot weather months to the well-known Cauvery Power Scheme, which is another of the greatest achievement of the State. The need for the extension of the Power Scheme is increasing, due to the rapidly rising demand for power and this big reservoir has offered itself as an unfailing source of power water.

Consequent on the construction of this large Dam, the Cauvery Power Scheme has gone on increasing its power output, from about 6,000 E.H.P. in the year 1902 to the peakload of 60,000 E.H.P. in 1939-40. This increase of power has given great impetus for starting several industrial concerns in the State, such as the Mysore Chemicals and Fertilizers at Belagola, the Sugar Factory at Mandya, the Cement Factory at Bhadravati, the Porcelain Factory at Bangalore, the Paper Mills at Bhadravati and Cotton Mills at Davangere. The Mysore Iron and Steel Works will very soon start electric furnaces for smelting purposes. As many as 40 towns in the State have so far been supplied with electric power.

The second stage provides for storage up to *plus* 124 feet for irrigation purposes. The large Irwin Canal named after Lord Irwin a former Viceroy of India, takes off from the north end of the Dam. It is capable of irrigating 1,20,000 acres in the arid tracts of Mandya, Maddur and Malvalli taluks.

The total length of the main canal and its branches, when completed will be nearly 220 miles. The head discharge in the Canal is 2,200 cusecs with a full supply depth of 12 feet. A notable feature of the Canal is that it passes at the 27th mile through a tunnel $1\frac{1}{4}$ miles long, bored through a range of hills which had been an impediment on its way. The tunnel is situated at about 5 miles from the Byadarahalli Railway Station on the Mysore-Bangalore Railway line and is reached by a motorable road. There is also another tunnel of 1,336 feet length across a ridge along the Shimsha sub-branch of the Maddur Branch of the Irwin Canal. Works intended to secure the maximum projected extent of 1,20,000 acres are under progress. So far, it has been possible to complete works to provide water supply to an extent of 70,217 acres, and an extent of 54,650 acres has been brought under irrigation to end of June 1939. The block system of irrigation adopted for raising paddy, sugarcane and dry crops by triennial rotation in large blocks, is a unique feature of the irrigation under the Irwin Canal. By this system, the evils of over-irrigation due to paddy cultivation alone and the consequent insanitary conditions are considerably minimised. Besides, the fertility of the soil would be retained by this system, as otherwise mere sugarcane cultivation would exhaust the soil, making it saline and unfit for raising other kinds of crops. Obviating the evils of water-logging and consequently minimising the unhealthiness in the irrigated tracts are an important feature of the rotational system.

Several inter-village communications are opened in the Canal tract for the benefit of the villages at a total cost of about Rs. 5 lakhs, for transport of crops and proposals for opening further communications at an estimated cost of about Rs. 3 lakhs are yet to be developed. The newly constituted Mandya District, which was once an arid tract, is now, in essence, a zone of extensive agricultural and industrial centre with all facilities created for irrigation.

Brindavan gardens

The most beautiful, admirable and the famous "Brindavan Gardens" situated on both the banks in the rear of the Krishnaraj Sagar Dam are attracting thousands of visitors from all parts of India every year. Engineering technique is so harmoniously blended with aesthetic sense in the make up of the gardens that it makes the visitors feel that the gardens are an "Earthly Paradise" or "Heaven on Earth." When they are once visited, the enchanting beauty and the enjoyment of the scenic effect produced on the minds of visitors by the magnificent environment are everlasting and can never be forgotten. The High Pressure fountain in the rear of the Dam situated in the centre of the pond between the banks of the river, shoots up water to a height of 140 feet and comes down as millions of sparklets. Boating by a motor launch and row boats on this pond is enjoyable by one and all. During the year 1939-40, there were as many as 2,30,000 visitors and a revenue of Rs. 16,983 in the form of toll collections was realised. The new Hotel building with up-to-date and modern conveniences, built at a cost of Rs. 1,35,000 in the Brindavan Gardens, is an imposing structure commanding an excellent view of the gardens below. The Hotel has been in use since September 1939 and has been very popular and highly appreciated by distinguished visitors and is said to be one of the best Hotels in India.

Agricultural Farm

There is a large model Agricultural Farm extending over 650 acres, established at a distance of seven miles from Mandya Railway Station. Research work is being undertaken to collect hydraulic data regarding duty of water for several crops and the high rated commercial crops to be

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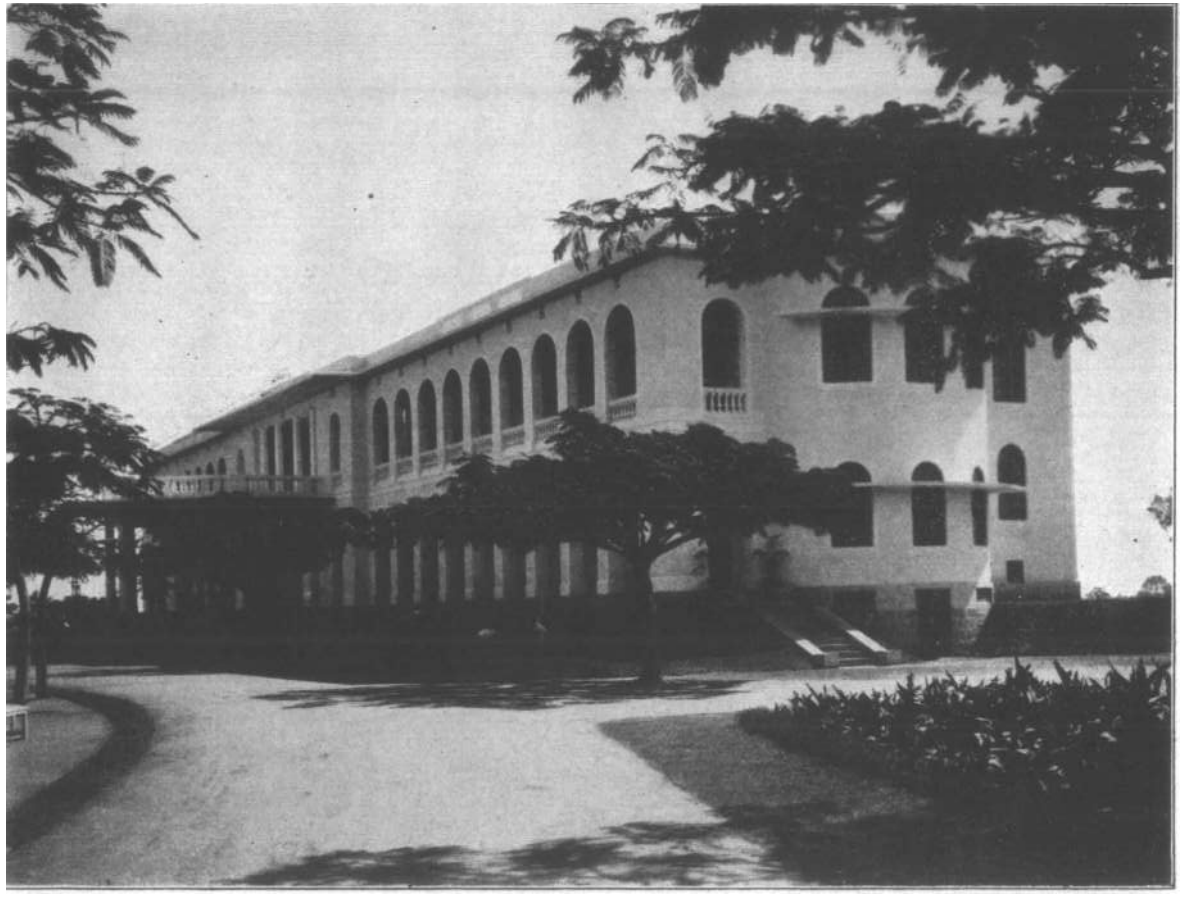

HOTEL KRISHNARAJSAGAR.

HOTEL KRISHNARAJSAGAR OVERLOOKING THE FAMOUS BRINDAVAN GARDENS.

undertaken in lieu of paddy. It has to be stated that the magnitude of the work carried on at the Farm and its general utility have been so extensive that the average yield of sugarcane in this area is double that of the average yield in other parts of India.

In order to find a suitable market for the sugarcane grown under the Irwin Canal, a Sugar Factory capable of crushing 1,400 tons of cane per day is established at Mandya.

The main idea underlying the establishment of the Irwin Canal Farm is to develop the full anticipated extent of 1,20,000 acres under the Irwin Canal and its branches on suitable, healthy, economic and scientific lines as rapidly as possible. It would be an incumbent necessity shortly to establish another Sugar Factory in the District to cope with the Sugarcane production due to the additional irrigable extent of about 50,000 acres to be developed under the several branches of the Irwin Canal contemplated for execution in two or three years.

Other Schemes

Besides the area under the Irwin Canal, there is scope for extending the irrigation in the Cauvery Valley in Mysore by an additional permissible extent of about 1,50,000 acres by the construction of additional reservoirs, improvement of duty, etc. Preliminary investigations have been made for reservoir schemes across the Kabbini, the Hemavathi and the Lakshmanathirtha, for irrigating an extent of 1,10,000 acres. The project for the first stage of the reservoir across the Kabbini, costing about Rs. 53 lakhs is under active consideration of Government. Opportunities are, therefore, open to the young Engineers of the State to show their talent and enterprise in bringing these schemes to a successful end. The project estimated to cost Rs. 2,50,000 for taking a canal from the Left Bank of the Keelaghatta *Ane* has been under execution and is progressing well. Various other schemes for extension of irrigation above and below the Krishnaraj Sagar Reservoir are under investigation.

Shifting of villages

With a view to affording relief for such of the villages as are situated very near the water spread of the Krishnaraj Sagar and consequently subjected to chronic malarial complaints, Government have sanctioned the shifting and other improvement works of 11 villages in Mandya District and 9 villages in Mysore District at a total estimated cost of about Rs. 1,50,000 as a remedial measure to combat the evils of malaria.

Draining and Breaching of Mandya Tank

This is one of the works proposed in the interest of the health of the Mandya town, the District Headquarters which is rapidly expanding. Government have sanctioned an estimate amounting to nearly Rs. 90,000 for the above works.

For lowering the waste weir of Hirode tank by four feet to improve the health of French-Rocks town, an estimate amounting to Rs. 37,200 is also sanctioned by Government. The problem of control of malaria and prevention of water-logging in the vicinity of villages and other allied questions affecting the health of the inhabitants in the Irwin Canal tract continue to receive close attention and all possible remedial measures are adopted.

General

The Krishnaraj Sagar Dam and the Irwin Canal undertaken during the illustrious reign of His late Highness Sri Krishnarajendra Wadiyar Bahadur, G.C.S.I., G.B.E., Maharaja of Mysore, have not only opened a vista of possibilities of ever-increasing value to the State but also helped to increase the productive power of the country. The vast tract of the country which was barren and where hardly a rain-fed crop could be grown successfully, has been markedly transformed into smiling fields. While there was remission of assessment under tanks almost in every district, owing to unfavourable seasonal conditions, raiyats in the Irwin Canal tract had the protection of the stored water in the reservoir at Krishnaraj Sagar. The opening of the Irwin Canal has secured many indirect benefits for the State, such as, increase in general wealth and prosperity, protection from famine and its inevitable consequences and rise in the economic standard of the agricultural population.

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PUBLIC HEALTH IN MYSORE

By P. Parthasarathy, L.M.S., B.S.Sc., L.R.C.P., L.R.C.S., D.T.M., D.P.H.,
Director of Public Health.

THE need for a separate Department of Public Health was recognised as early as 1887 and in 1929 the department was reorganised on a system of Bureaux—Bureau of Administration, Bureau of Epidemiology, Bureau of Laboratories, Bureau of Vital Statistics, Bureau of Health Education, Bureau of Rural Health and Bureau of Sanitary Engineering. A separate division for the Bangalore City Drainage Works has also been formed. The activities have spread largely during recent years as progress was made from time to time in the advancement of health plans and procedures. A brief description of the work done is given below.

Bureau of Administration

The Bureau of Administration which is directly under the Director of Public Health deals with all matters of administration.

Bureau of Epidemiology

The Bureau Epidemiology makes a study of the diseases prevalent in the State; undertakes experimental measures for their control; deals with the control of epidemic and endemic diseases; receives and publishes reports on them and attends to such other duties as may be assigned to it. Hookworm control programme works under this Bureau.

Bureau of Laboratories

The Bureau of Laboratories promotes and carries out the routine examinations demanded by health work; prepares sera and vaccines; makes chemical analyses; examines medico-legal cases; carries out research and performs such other duties as may come within its purview. For the present it consists of the Public Health Institute and the Vaccine Institute.

Bureau of Vital Statistics

The Bureau of Vital Statistics supervises the registration of births, deaths and marriages; undertakes the compilation of vital statistics in the State and takes all necessary measures to improve such registration; receives, files and tabulates for publication all records of such occurrences and studies the effect of disease control methods from a statistical standpoint.

Bureau of Health Education

The Bureau of Health Education carries out health propaganda work by means of cinema publicity, lectures, health education and publicity in schools, newspaper publicity, leaflets and posters, and organisation of health weeks, baby shows, exhibitions, etc.

Bureau of Rural Health

The Bureau of Rural Health has supervision over reports upon and organises the rural health administration of the State.

Bureau of Sanitary Engineering

The Bureau of Sanitary Engineering reports upon all public and private systems of water supplies and sewage disposal; examines all sources of water supply, and prepares proper maps and drawings for permanent record; investigates all sources of pollution of water supplies; scrutinises and reports upon all town-planning, irrigation or other schemes which have any direct or indirect bearing on the health of the people; investigates and reports upon the engineering aspects of disease control; has supervision over the sanitary arrangements, ventilation and lighting of schools, jails and other public buildings.

Health Services

The agencies responsible for health activities are the Central Department of Health, the district boards, city and town municipalities and rural health organisations. The local bodies are primarily responsible for carrying on health work in their respective jurisdictions, in accordance with the

HEALTH CINEMA SHOW IN A RURAL AREA: THE MOTOR VAN CARRIES THE ELECTRIC GENERATOR.

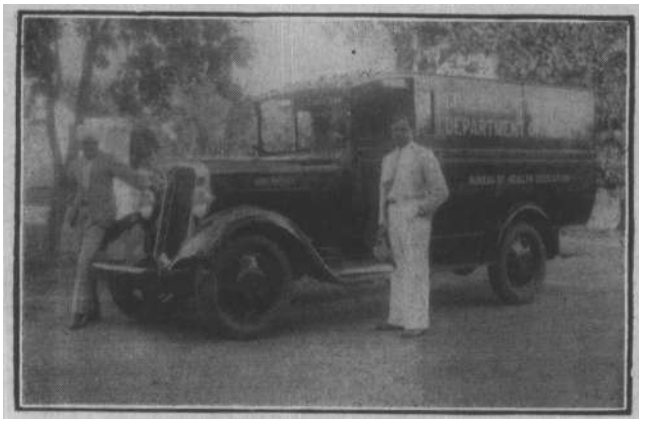
EXHIBITION IN A RURAL AREA.

GUINEA WORM CONTROL: STOP-WELL SHOULD BE CONVERTED INTO DRAW-WELL.

GUINEA WORM CONTROL: DRAW WELLS PREVENT THE SPREAD OF GUINEA WORM.

CONTROL OF MALARIA—SPRAYING PARIS-GREEN.

ANTI-MALARIA ENGINEERING—PERMANENT MEASURES—CHANNEL STONE-RIVETED.



MOTOR VAN USED IN PUBLIC HEALTH EDUCATION PROPAGANDA WORK.

provisions of the District Board, Municipal and Village Panchayet Regulations.

The President of the District Board, as the executive head of the district, is assisted in all sanitary matters by the District Health Officer with a staff of Sanitary Inspectors and Vaccinators. In Mysore and Shimoga Districts, the District Health Officer is a full-time officer, whilst in the remaining six districts, the District Medical Officer acts as Health Officer as well.

All health work in the district is referred to the Health Committee, the District Health Officer acting as Adviser on all health matters. Control of epidemic diseases is organised with the help of the staff and with the co-operation of the medical officers of dispensaries situated in the district. These latter officers carry out the preventive inoculation work in their areas under the general supervision of the District Health Officer.

The duties of the Sanitary Inspectors consist of epidemic duty, supervision of vaccination, inspection of hotels, markets, fairs, slaughter-houses, etc., and in general, looking after the sanitation in the villages. In addition to these, however, the Sanitary Inspectors are employed on minor engineering work undertaken by the District Boards and also in the collection of tolls.

It will be seen that the department co-ordinates all the health work done in the State. The Sanitary Inspectors are selected and appointed by the Director, who also controls transfers. The Vaccinators who are at present engaged direct by the Presidents of District Boards, are selected out of a list of qualified Vaccinators maintained by the department. Transfers of such officers are effected in consultation with and on the recommendation of the Presidents of District Boards.

The vaccination work rests with the local bodies, and the department not only supplies the vaccine lymph prepared by the department, but supervises the work of vaccination all over the State, both of the vaccination staff and of the medical staff in charge of dispensaries.

Increase of population

During the year 1939, 1,38,120 live births were reported giving a birth-rate of 20·0 per mille of population. The number of deaths registered was 98,759, excluding 2,923 still-births, giving a death-rate of 14·3. Thus an increase of 39,361 births over deaths was registered during the year.

The deaths classified under the several causes indicate a 50 per cent decline in the incidence of epidemic diseases and a small rise in the incidence of non-epidemic diseases. As regards the variations in the incidence of diseases it may be noted that in the *malnad* malaria, typhoid and other fevers, dysentery and diarrhoea and respiratory diseases are all significantly more prevalent than in the *maidan*, consumption alone being relatively more highly prevalent in the *maidan*.

Control of Epidemic Diseases

Plague Control.—During the year, 2,352 deaths from plague were reported as against 5,196 in the previous year. As a preventive measure 1,32,536 anti-plague inoculations were done.

Rat destruction by means of cyanogas fumigation was conducted in 12,784 houses in Mysore City, 465 houses in Krishnarajnagar, 325 houses in Saklespur, 5,973 houses in Bangalore City, 6,231 houses in Kolar Gold Field and 926 houses in Rural Health Unit, Mandya, making a total of 26,704.

The Presidents of Municipal Councils and District Boards have been requested to get their qualified Sanitary Inspectors and Assistant Sanitary Inspectors specially trained in cyanogas fumigation work at the Health Training Centre, Closepet. This training is preliminary to organising an intensive anti-rat campaign in the known plague endemic areas.

Small-pox and Vaccination.—During the year a low incidence of small-pox was reported all over the State, 641 deaths being reported. Owing to the importance of checking vaccination work, a whole-time Health Officer was assigned duties during the year for checking vaccination work in those districts where District Health Officers have not yet been appointed. Also during the year vaccination campaigns were started in Mandya, Mysore and Shimoga Districts and in Kolar and Kolar Gold Field. In all 4,25,632 vaccinations were done. In this connection, it may be stated that the success rates among primary vaccinations exceeded 92 in all districts, showing the high potency of the glycerine lymph and the improvements effected in the technique of vaccination.

Cholera Control.—Cholera in Mysore State is not endemic and if preventive measures are taken in time to check the spread from outside the State it is quite possible to control its spread

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inside the State. The incidence of cholera during the year was very low with only 533 deaths registered. Investigations are being made to find out whether these sporadic cases occurring immediately after the first rains in a few places only are really true cases of cholera. As a preventive measure however, 5,450 anti-cholera inoculations were done out of vaccine prepared at the Public Health Institute, Bangalore.

Malaria Control.—Government sanctioned during the year (1) the permanent anti-malaria engineering works at Hiriyur; (2) anti-malaria works in Belur; (3) malaria control work around the P. K. T. Sanatorium, Mysore City; and (4) the starting of itinerant dispensaries in Krishnarajnagar and Pavagada. Under permanent anti-malaria engineering works in the Irwin Canal area a sum of about Rs. 40,000 has been spent, and in Hiriyur and Belur the amount aggregated to Rs. 11,000.

Malaria control works are carried on in the following places in Mysore State:—

Bangalore District.—
(i) Bangalore City.
(ii) Tippagondanahalli.

Chitaldrug District.—
Hiriyur town (by permanent anti-malaria engineering methods; also malaria experimental station).

Hassan District.—
Nil.

Kadur District.—
(i) Sakrepatna.
(ii) Mudigere (malaria experimental station).

Kolar District.—
Nil.

Mandya District.—
(i) Mandya Town.
(ii) Ten villages of the Irwin Canal area.
(iii) Kyathangere (by permanent anti-malaria engineering methods.)
(iv) Bevinahalli do do
(v) Sundahalli do do

Mysore District.—
(i) Nagenhalli (malaria experimental station).
(ii) Mysore City.
(iii) Area around P. K. T. Sanatorium.

Shimoga District.—
(i) Bhadravati New Town.
(ii) Bhadravati Old Town.

Tumkur District.—
Markonahalli.

School Medical Inspection

During the year 21,370 students were examined under the auspices of the Education Department, of whom 7,885 (or 36·9 per cent) were found to have defects, excluding cases of malnutrition which numbered 3,400. At the Health Training Centre, Closepet, 1,086 students were examined.

Health Education

Health education by means of the cinema shows on health subjects has become very popular. During the year 173 shows were organised in 103 places to an audience of about 1,05,000 persons as compared with 190 shows in 94 places to 1,14,000 persons in the previous year. As usual, the cinema equipment and staff travelled in the departmental motor van and covered a total distance of 9,236 miles against 8,293 in the preceding year. The following are the number of shows held in districts and cities: Bangalore City (43); Mysore City (12); Kolar Gold Field (9); Bangalore (27); Chitaldrug (5); Hassan (11); Kadur (3); Kolar (12); Mandya (4); Mysore (24); Shimoga (15); and Tumkur (8).

Health Exhibitions

The permanent health museum in Mysore was kept open to the public throughout the year. Two models on the bore-hole latrine and the well were added during the year and another on rat-proof house was under progress.

The usual Dasara Exhibition was held in Mysore at which a large section on nutrition and its importance to health was much appreciated by the public. Health exhibitions were also got up in Bangalore City and Kolar Gold Field on the occasion of the 75th anniversary celebrations of the Red Cross Society. The department co-operated with the Rural Welfare Centre in Closepet in putting up an exhibition in connection with the visit of His Excellency the Viceroy in January 1939.

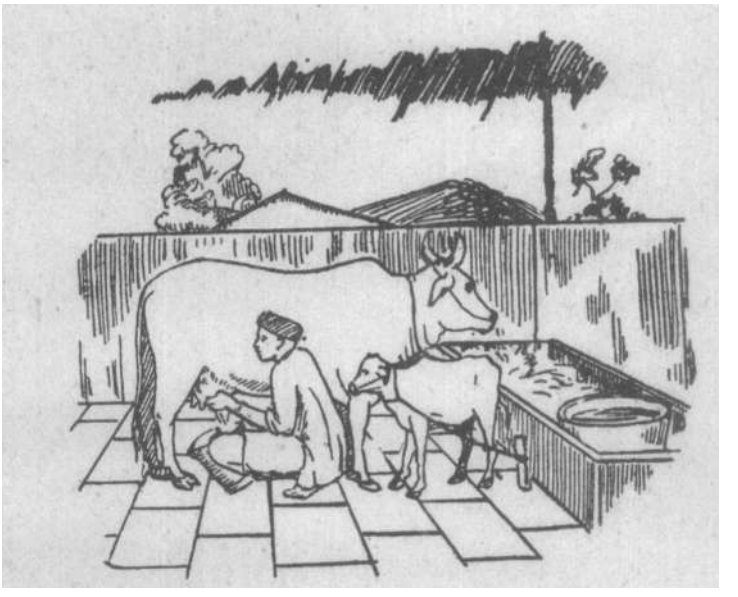
Public Health Institute

At the Public Health Institute 16,512 samples in the bacteriological section, 2,543 samples in the chemical section, and 312 cases with 1,141 articles in the medico-legal section were examined. During the year 11,010 c.c. of anti-cholera vaccine and 31,531 c.c. of T.A.B. vaccine were issued for use Biological methods of investigation of the nutritive value of food-stuffs were continued, during the year.

Vaccine Institute

During the year glycerine lymph enough for 9,43,700 cases was produced as against 7,16,525

RICE KANJI, WHICH IS USUALLY THROWN OUT, IS GOOD FOR HEALTH.



MILKING UNDER SANITARY CONDITIONS.

cases in the previous year. The average yield per calf was 408 grains equivalent to 5,100 cases and the average cost of lymph issued per case was 7 pies as compared with 12 pies in the preceding year.

Sanitary Engineering

The Municipalities where protected water supply is at present given number 50, including Melkote and Bowringpet where water supplies were given during the year. Excluding the Cities, 43 Municipalities are working out the drainage schemes. The amounts spent on capital works and maintenance, etc., are given under "Expenditure on Public Health."

Rural Health Work

Rural health units at Mandya and Closepet continued to do useful work during the year. Village improvement works on a health league basis were being carried out in the Health Training Centre, Closepet, in 34 villages and the activities were started in 6 more villages bringing the total number of such villages to 40.

Control of Guineaworm in Chitaldrug District

Three hundred and twenty villages were found to be infected with guineaworm in Chitaldrug district six years ago. The infection in these villages has been controlled by the conversion of step-wells into draw wells and by the biological method of introducing fish into the wells. So far 273 draw wells have been provided and the villages that are not now provided with draw wells are controlled by the biological method.

Combined Local Health Committee

As per resolution of the Central Advisory Board of Health a combined Local Health Committee was established during the year for centres where the health problems of the civil, military and railway authorities converge and co-operative schemes are required for their solution.

The first meeting of this Committee was held on August 31, and problems such as the prevention of mosquito nuisance in the City and Cantonment areas were discussed. A good deal of work in this connection has already been done.

Central Health Committee.

In pursuance of a resolution passed by the Central Advisory Board of Health a resolution was passed by the Central Health Committee that the Member of Government in charge of the Public Health Department be made the Chairman of the Central Health Committee with the Director of Public Health as Secretary. Government have constituted the Central Health Committee with the Second Member as Chairman and the Director of Public Health as Secretary.

Sanitary Inspectors' Training Class.

The fourth batch of 39 students were undergoing training at the Sanitary Inspectors' Training Class at the end of the year. With a view to enabling the Municipalities to attend more efficiently to the work of sanitation, the sanitary maistries who are not well qualified for the task are being replaced in such Municipalities by Assistant Sanitary Inspectors who have passed out of the Sanitary Inspectors' Training Class.

Training of Officers.

The four Health Probationers appointed by Government and the two appointed previously were trained for two months each in city health work, district health work, rural health work, malaria control work and in the laboratories of the Public Health Institute, Vaccine Institute and the Central Office.

Centralized Scheme of Vital Statistics Compilation.

The centralized scheme of compilation of vital statistics introduced in Mysore State from January 1, 1938 has been adopted as a model by the Central Advisory Board of Health, and a note on the working of this scheme was supplied on request to other States and Provinces. At present the scheme is in force in only two districts and the cities, and it is expected that this new system will be introduced into the remaining seven districts at a very early date.

Expenditure on Public Health.

The total expenditure on public health during the year was Rs. 37·61 lakhs as compared with Rs. 33·10 lakhs in the previous year. The details of expenditure are as follows :—

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	Items			Expenditure in Rs.	
				1939	1938
I	Health Administration			16,50,000	14,61,000
	(i) Central Department of Public Health ...		3,17,703		
	(ii) District Boards		2,08,295		
	(iii) Village Panchayets		4,46,084		
	(iv) Municipalities		6,78,138		
	(a) Bangalore City	1,75,136			
	(b) Mysore City	1,51,745			
	(c) Kolar Gold Field	45,815			
	(d) Other Places	3,05,442			
II.	Water Supplies ...			16,45,000	15,32,000
	(i) Maintenance		10,16,419		
	(a) Bangalore City	5,98,367			
	(b) Mysore City	1,99,784			
	(c) Kolar Gold Field	1,35,711			
	(d) Other Places	82,557			
	(ii) Capital Works		3,28,703		
	(a) Bangalore City	13,484			
	(b) Mysore City	58,042			
	(c) Kolar Gold Field	9,327			
	(d) Other Places	2,47,850			
	(iii) Rural Water Supplies		3,00,000		
III.	Drainage			3,38,000	2,80,000
	(a) Bangalore City	1,54,005			
	(b) Mysore City	83,015			
	(c) Kolar Gold Field	3,009			
	(d) Other Places	98,030			
IV.	Sanitary Fittings		1,15,000		37,000
	(a) Bangalore City	33,333			
	(b) Mysore City	47,159			
	(c) Other Places	35,006			
V.	Town Planning			7,000	...
VI.	Anti-malaria Engineering ...			6,000	...
		Total	...	37,61000	33,10,000

In the Medical Department 19·80 lakhs were spent in respect of the hospitals and dispensaries on the curative side. Including this amount the total expenditure on public health was Rs. 57·4 lakhs, the increase in expenditure during the year being Rs. 4·8 lakhs.

UNIVERSITY OF MYSORE

By the Registrar, University of Mysore.

THE University has at present the Faculties of Arts, Science, Engineering and Technology, and Medicine. Teaching which generally forms another faculty is, here, included in the Arts faculty. The University has a total strength of 4,246 students, of whom 556 are taking professional courses like Engineering (degree and diploma), Medicine (degree and diploma), and Teaching. The number of women students is 340. The number of students of the depressed class in 1939-40 was 556, which is more than double the number in the previous year. The number of students declared eligible for admission to the University courses on the results of the S.S.L.C. Examination was 1,898, while those declared eligible for degree courses on the results of the Intermediate Examination was 580.

Owing to the increasing demand for admission to the University courses, diversion after the School Final to vocational courses has been attempted by instituting diploma courses in vocational subjects. Of the several diploma courses sanctioned, four have been started immediately: three in Engineering—Civil, Mechanical and Electrical—and a fourth in Commerce in Bangalore. From the applications received for admission, it has been found that the Commerce course is popular, and it will be probably necessary to open classes in the diploma course in Commerce at Mysore as well. It is proposed to start diploma courses in Music and Home Science next year.

In order to prevent overcrowding in the Intermediate Colleges at Mysore and Bangalore, Intermediate Colleges, with both arts and science sections, have been established in the mofussil, beginning with Tumkur and Shimoga. 153 students have been admitted to the Junior Intermediate Class in Tumkur and 118 in Shimoga. The demand for professional education is on the increase as evidenced by the large number of applications for admission to the College of Engineering, the Medical College, and the Medical School. Admission to the College of Engineering has had to be increased from 65 last year to 80 during the current year. The University has been reserving seats in the professional courses—Medicine, Engineering, and Teaching—for students from other States. The question of adding a Law faculty is engaging attention.

Besides paying attention to the ordinary curricular studies, the University has instituted a scheme of extension lectures by which popular lectures on scientific and literary topics are delivered by members of the University staff not only in the cities of Bangalore and Mysore, but also in the mofussil. The University Teachers' Association which receives a grant for this purpose from the University organises camps extending for a week each in different parts of the State during the Dasara, the Christmas holidays, and the summer vacation. Some of the lectures delivered have been brought out in the form of small booklets which are sold at a low price of two annas each.

The social and physical needs of students are receiving adequate attention. Compulsory physical education has been introduced from the Junior Intermediate Class of 1939-40 so that now there is compulsion in both the Intermediate classes. Facilities have been provided for military training being given to about 400 members, including students and staff. There are two University Unions, one at Bangalore and the other at Mysore, which arrange debates, lectures, and entertainment. Besides these there are college associations, particularly in the Intermediate College, Bangalore, the Maharani's College and the Medical College doing similar work for their students.

There are canteens attached to the several colleges which by supplying healthy midday tiffin have made it possible to introduce compulsion in physical education.

The University has received a large number of endowments mostly intended for scholarships for special communities, and medals and prizes for success in the examinations. A recent endowment

founded by the late *Rajasabhabhushana* Diwan Bahadur Sir K. P. Puttanna Chetty is for a special object, namely, to bring about community of interest between the University and the masses, and help the people to take a direct personal interest in the University by spreading the benefits of advanced knowledge and scientific research among the people of the country in a form susceptible of easy absorption. A committee has been appointed to carry out the objects of the endowment. They have selected writers to bring out books on Broadcasting; Electricity and its use; Making the most of the Soil; Child Welfare; Government system and Structure; Aviation; Post Office (including telephone and telegraph systems); Mining and Metallurgy; and Growth and Structure of Universities. The total value of endowments received is Rs. 4,36,988.

A special feature of University work has been the attention paid to the publication of standard books in Kannada on modern scientific topics and classical literature. A special committee has been appointed for this purpose which has so far brought out thirteen monographs on varied topics.

The University has also undertaken the publication of a standard English-Kannada Dictionary, of which five parts have been issued out of the twelve parts required to complete the Dictionary.

The "Prabuddhakarnataka" is a journal in Kannada published by the University. It has a wide circulation. The University has sanctioned a scheme for publishing a University Journal having sections for arts, science, engineering and medicine. The journal will be published twice a year.

The most noteworthy feature of University work during the past year has been the organisation of a University Settlement under the wardenship of Mr. P. S. Wright. The object of the Settlement is to train students in social welfare work. Provision has been made for ten students to reside in the Settlement and for two graduate probationers. The Settlement arranges for rural work during week-ends and camps during holidays. The Settlement has recently helped to organise a literacy campaign.

MYSORE CHEMICAL MANUFACTURES, LIMITED

Works at Chikbanavar and Belagula (M. S. Railway)
Manufacturers of "M.C.M." Brand Heavy and Fine Chemicals)

WITH a view to meeting the considerable demand for the basic chemical Sulphuric Acid and derived sulphates like Alum, Copper Sulphate, etc., in South India, the Mysore Chemical Manufactures, Limited, was started early in 1938 at Bangalore, with an authorised capital of Rs. 5 lakhs and an issued capital of Rs. 2 lakhs. The Government of Mysore granted various valuable facilities, *i.e.*, acquisition of lands at cost needed for the factory, a free supply of water as well as an assurance that Government will purchase their requirements, if any, from the firm provided price and quality were found satisfactory.

Early in 1940, the Company agreed to take a quantity of 5 tons Sulphuric Acid daily from Mysore Chemicals and Fertilisers, Limited, for the purpose of making derived chemicals. The Factory at Chikbanavar was completed and equipped for the production of *Copper Sulphate Crystals* in large quantities using Sulphuric Acid as raw material. The Company was also fortunate to get an order immediately from the Agricultural Department of the Government of Mysore for a good quantity of Copper Sulphate for spraying operations which was supplied in time and upto the required specifications. It may be mentioned, in passing, that the firm is the only one of its kind in South India manufacturing Copper Sulphate on a large scale.

In order to utilise the 5 tons of Sulphuric Acid produced at Belagula by the Mysore Chemicals and Fertilisers, Limited, another factory was constructed close to the latter. The factory which was only recently completed, now produces large quantities of *Sulphate of Alumina* needed for water purification by various Municipalities and also required by the Paper Mills. *Alum* which is another product having a good demand throughout India, and also *Magnesium Sulphate* (Epsom Salt) and *Ferrous Sulphate* are being manufactured in large quantities at the Belagula Factory. "M.C.M." products have already made a name for themselves in the South Indian markets and it is hoped that very soon markets in other parts of India will be secured for the finished products of the two factories which amount to 3,000 to 4,000 tons annually.

THE ROLE OF TEST TUBE CALVES IN THE RAPID IMPROVEMENT OF CATTLE IN INDIA

By J. D. Sampath Kumaran, L.V.P. (Hons)., B.S.A.

Member of the National Institute for Research in Dairying, University of Reading, England; Manager, Palace Dairy Farm, Rayanakere, Mysore.

THE application of science to industry and to the general improvement of livestock has of recent years brought animal-breeding into contact with a rapidly widening range of social problems. The age of maintaining a herd for the sake of glory and prestige is gone. We live in an age of reality. Things have got to be viewed in their economic aspects. It is one thing to say that we revere the cow as a deity but it is quite a different thing to maintain her when we get no milk. We all like the cow when she is a Kamadhenu.

Cows with high yielding qualities are now an absolute necessity. The ways and means of improving our livestock are really the pressing problems of the day. Though we have in India more than 600 millions of cattle—the highest in the world, yet the per capita consumption of milk is only 7 ounces which is the lowest. Various forces are in operation to improve the milking qualities of our cattle. Here lies the importance of producing the test-tube calves.

Artificial Insemination

Artificial insemination is not a new science of the present century. It is said that the Arabs in antiquity practised this method as a means of combating barrenness in stud mares. Exact information about its application in our country is not available. The first literary evidence of a veterinary and animal breeding cult in India is to be found in the Rig Veda (2000—1400 B.C.). Lack of reliable chronology makes it difficult to trace details, but the author is of opinion that even in India, this zoo technique might have been in vogue. For in the mythological stories we do find instances wherein the female has become pregnant without mating with the opposite sex. Udhalika and Machianjeneya are both beautiful examples. Writers of old had their own way of garbing particular scientific materials pertaining to sex with a view to making the reading pleasant.

Experiments in Europe

In Europe the first successful experiments of artificial insemination in the bitch have been reported and duly placed on record by an Italian Abbot named Spallanzani at the end of the eighteenth century.

In more recent times in the course of the 19th century, this method has been practised by medical men, veterinarians, zoo technicians, and biologists with a lesser or greater degree of success, but it was not accorded a general recognition for various scientific, social and religious reasons.

Experiments in modern times

A series of brilliant works by scientists of the Austrian, English and particulary Russian School, which appeared at the end of the last and beginning of the present century have entirely dispelled such sceptical and purely negative attitudes. The utility and economic value of this method as applied to animal husbandry has been irrefutably proved by the field work which has been conducted on a large scale throughout the world in the post-war period, and more particularly in the U.S.S.R., Japan, Canada, U.S.A., England and Palestine.

Reproduction

In natural copulation the semen is introduced into the female genital tract by the external male organ, which penetrates as far back as the proximal end of the vagina and large numbers of spermatozoa are deposited round the external Os of the cervix. From here the actively mobile spermatozoa penetrate the uterus and ascend the Fallopian tubes to the site of fertilization near the ovaries. Only a small proportion of the spermatozoa actually gain

access to the uterus or ascend the tubes. The surplus is absorbed or extruded. The total number of spermatozoa per mating in a bull will be about 2,400 millions, but out of that colossal figure it is remarkable to note that one single spermatozofa fuses with the ovum and becomes the future calf. Why such a huge waste in nature is a mystery.

Artificial insemination differs from the natural process in so far as the semen is introduced into the genital passages of the female by means of instruments.

It has been recognised by the authorities that the sperm not poluted and thinned by the vaginal secretions is more potent in the sense that the purity of the seminal fluid enhances the chances of succesful impregnation of the dam and increases the period of survival of the sperm outside the organisms. It is also on record that the sperm in a pure state could be kept alive for nearly three days outside the animal body. This factor enables the despatch of sperm to distant places.

Methods of sperm collection

At present the following four methods of obtaining sperm are mainly used :—

(1) The Sponge Method.—A sterilized sponge is placed inside the vagina of the cow in heat and the bull is allowed to mate. The sponge is then removed and the sperm squeezed out into a sterile glass vessel for insemination.

(2) The Vaginal Method.—This consists in the collection of the sperm from the anterior end of the vagina after mating.

(3) Artificial Vagina.—This consists of a cylindrical tube made from different materials and simulating the genital passage of the dam. At the time of mating, it is placed over the male organ and the ejaculate is thus collected in the glass receptacle.

(4) The Sperm Collector.—This consists of a special instrument which is inserted into the vagina of the cow and from which the ejaculate is collected. It is in this method that you get the very best results.

Advantages

For practical purposes the method offers certain advantages. Since by means of instruments a small quantity of semen can be placed with accuracy within the cervix, a higher proportion of spermatozoa gain access to the uterus, resulting in greater certainty of impregnation and considerable economy of spermatozoa. Artificial insemination may therefore be used to increase the certainty of conception, and may even prove successful when repeated normal matings had failed. Also since one single ejaculate of the male can be used to impregnate several females, the number of young sired by a given bull during a given period of time can be very greatly extended. In the case of an outstanding male this may be of considerable value in livestock improvement. To attain this, special dilutors are used. By diluting it is possible to increase the volume and in this way to raise the number of females inseminated by a single ejaculate. A very handy dilutor is the solution of egg yolk and sodium phosphate. This added solution does two things. First it increases the volume and second the egg yolk assists in keeping the sperm alive, active and fertile. This is of tremendous importance to the successful operation of artificial insemination. A recent Russian report states that from one accredited bull in one year about 2,000 calves were got and from one ram 18,000 lambs. The technique of dilution has been an important factor in the success of the huge experiments conducted in the U.S.S.R.

Transport of the sperm

Artificial insemination also offers the possibility of transport of semen to distant places. The practical advantages which would accrue from this would be considerable. It would extend the usefulness of the best sires and enable breeders of livestock to exercise much greater care in the choice of males if not limited to those in the immediate vicinity. This method could be used both in ranches where large number of animals are stationed in one place as well as in small holdings.

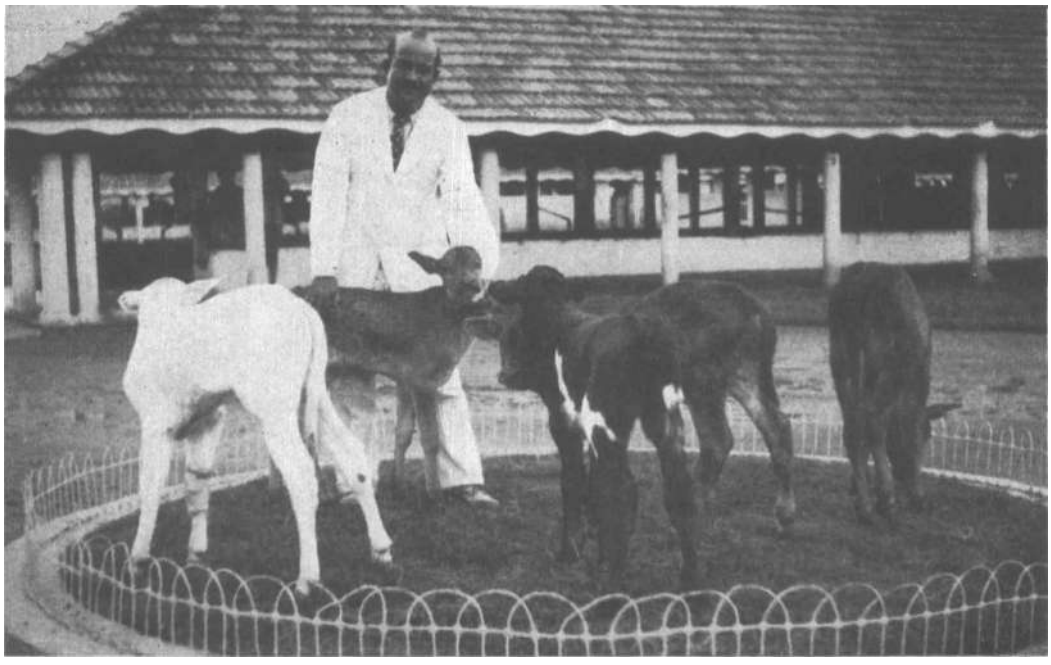
Advantage in Dairy Cattle

In dairy cattle breeding advantages would be greater owing to the short time that a cow remains on heat. Each farmer must have a bull on the premises or in the immediate neighbourhood, if he is to ensure having his cow in calf at the desired time. Only by doing so can he regulate his milk supply. The result is that far more bulls are kept than are absolutely necessary, and many of them are second and third rate quality. If sperm could be distributed from one or more centres the number of bulls could be reduced with great advantage. This will accelerate

DR. J. D. SAMPATHKUMARAN, MANAGER, PALACE DAIRY FARM.

COLLECTING THE SPERM.

THE TEST TUBE CALF WHICH WEIGHED 82 LBS. AT BIRTH.



INDIA'S FIRST TEST TUBE CALVES.

progress in livestock improvement by placing reliance on bulls selected from improved cattle tracts as well as bulls from Government farms. The number of farm bulls is seriously limited and quite inadequate for the needs of the country if the normal method of mating is allowed without recourse to artificial insemination. The discarded bulls could be used as bullocks for agricultural operations in our country.

Work in the Palace Dairy Farm, Mysore

In this study an attempt is made to present in a condensed form an account of a series of experiments and field work which has been carried on by the author independently at the Palace Dairy Farm, Mysore, from August 1939 onwards.

It must be emphasised at the outset that the work described here has been and still is in the nature of a pioneering effort, for no endeavours to introduce artificial insemination into breeding practice has hitherto been made in India. My practical experience in the Palestine Jewish farms has placed me on a sound basis to carry on the work. The instruments were partly brought from Palestine and a few were got from England.

The task has been limited to obtaining experimental proofs and to demonstrating that the seminal fluid freshly obtained by the "Artificial Vagina" method from the bull could effect impregnation if injected with the aid of instruments into the genital organs of cows in 'heat', that the resulting pregnancy would pursue its normal course, and that the young delivered at term would be quite normal and healthy in comparison with those conceived, carried and born after the natural mating under Indian conditions.

With a view to having a comparative conception percentage giving due allowance to the different types of animals and the seasonal variation, the technique was spread over.

On 20th August 1939 through the Russian model 'Artificial Vagina' sperm was collected from the bull 'Mudduram,' (State cow's son). The quantity of semen was 2 c.c. On that particular day the number of cows in heat was only three, T 21, S 110, and Q 45. They were all artificially inseminated. Pregnancy diagnosis based upon rectal examination was established by the author in every case after cows missed two successive 'heats' after insemination, that is in 44 days subsequent to operation. All the three cows were found conceived and all of them have given birth to very healthy and strong calves during the month of June 1940. That is the first result of the experiments done. So far another ten experiments have been carried on with a total of 30 cows. The number of cows calved is seven and the rest are all carrying. Experimental evidence obtained here is of such a nature as to leave no doubts regarding the economic advantages which might accrue to the farming community by the general introduction of artificial insemination into breeding practice in our country.

Economics of the Method

In the economics of artificial insemination, three factors are of decisive importance:—

(1) The number of outstanding bulls in the country;

(2) the number of cows allocated to and effectually served by each bull in every herd during the season; and

(3) the number of cows that could be effectually served from each inseminating station.

Artificial insemination is a paying proposition in countries where the need for rapid improvement of the livestock with a corresponding scarcity of noted sires exists.

The importance of factors 2 and 3 is demonstrated by the following calculations:

In herds in which natural mating is in use the cost of mating per cow (X) is determined thus:—

$$X = \frac{\text{Purchase price of Bull}}{\text{Years of Service.}} \text{ Plus Annual upkeep, etc.}$$

Number of cows served by the bull in a season.

Assuming that the value of an average bull is Rs. 300, its years of service 6, its upkeep Rs. 250 and the number of cows 60, and substituting figures in the above formula, we would get that,

$$X = \frac{\frac{300}{6} \text{ Plus } 250.}{60}$$

$$= \frac{300}{60}$$

Assuming that 50 calves are born from 60 cows, the cost of the calf (X1) would be as follows:—

$$X1 = \frac{300}{50} = \text{Rs. } 6$$

It has been experimentally proved in the U.S.S.R. and elsewhere that anything upto 2,000 calves

could be annually sired by a single bull if artificial insemination is applied in breeding practice. Let us assume that only 500 calves would be sired by each bull in our country: the cost of actually producing a calf would then be $\frac{300}{500}$ or Rs. 0-9-7. When compared with Rs. 6-0-0, this amount of Rs. 0-9-7, is, indeed, far cheaper.

Conclusion

These figures have been cited to prove once more the value and economic advantages of the application of Artificial Insemination in India.

Thus from whatever angle we look at the proposition its practical and economic value appears to be unassailable.

SILK INDUSTRY OF MYSORE

By M. A. Qadir, B.Sc., (Textile Expert.)

Officer in charge, Government Silk Factory, Mysore.

AMONGST all the textile fibres, silk is the costliest. It has certain characteristics which the other fibres do not possess They are:—

(1) Rich lustre, (2) Full handle, (3) Better draping properties, (4) Capacity to get loaded, (5) Facilities which a designer has in showing his skill (as silk can show the minutest details of a complicated design), (6) Its imparting warmth to the body which serves as a tonic to the heart, (7) Its durability and better wearing properties.

The above properties have made silk the richest of all textile fibres. Mysore Silk, which is claimed to have been introduced during the reign of Hyder Ali, has been famous amongst other silks due to its rich lustre and better finishing properties.

The Department of Sericulture, Mysore, have introduced another variety known as 'cross breed,' by crossing the female Mysore moth with the male Japan or China moth. It is claimed that these cocoons are economical than the pure Mysore race. It is a matter which has to be thoroughly investigated and established beyond doubt as to how far the cross breed cocoons are better than the pure Mysore race in all respects.

Silk reeling in Mysore was carried on as per old technique without taking advantage of the new scientific methods and processes. The silk thus reeled was utilised for the manufacture of coarser fabrics.

The starting of Filature by the Department of Sericulture, Mysore, and the reeling of high grade silk on up-to-date lines, opened out opportunity for the Mysore silk to be used in the manufacture of high grade silk fabrics.

In 1931, the Government Silk Weaving Factory, Mysore, was started with the idea of establishing a market for the Mysore silk. In the history of Mysore Silk Industry, the Silk Weaving Factory was the pioneer concern to manufacture high grade fabrics like Georgette, Crepe, Chiffon, Crepe and Georgette laced fabrics, Ties, Kerchiefs, Suitings, Shirtings, Interlaced gold fabrics, etc.

The establishment of Government Silk Weaving Factory and its efficient management has been responsible in establishing the Mysore Georgette, Crepe, Laced fabrics and Laced Georgette and Crepe Sarees as standard goods. The policy of the factory has been to manufacture and put only standard goods in the market. In spite of the keen competition from Japan, the gradual increase in sales year after year is a clear indication to prove the popularity which the Silk Factory goods command in the market.

Having in view the present market condition and the adulterated goods being passed as pure silk goods, it is necessary that a law is passed that all silk fabrics in future should bear an official certificate showing whether 'pure' or 'adulterated,' if adulterated, to what extent they are adulterated. Such a procedure will infuse a new life in the Industry and the public will not be easily misguided.

Silk, though a luxury, is an investment in the sense that it is the wearer of the pure silk goods who knows and enjoys it from the economical point of view. Silk fabrics are more durable and the higher price paid for these goods in comparison to the other goods, is obtained back in their being more durable. Mysore Silk Factory goods, when washed and ironed, appear new and fresh.

BANGALORE CHEMICAL AND MANUFACTURING COMPANY

The Incandescent Mantle

IN the year 1891, the German Chemist, Dr. Carl Auer von Welsbach, made the important discovery that Thorium Oxide containing about one per cent of pure Cerium Oxide emitted a brilliant light when introduced in the flame. Since then, all possible combinations have been experimented with, but none have proved so successful as the Thoria-Ceria mixture of Welsbach.

The ordinary soft silk mantle now in use everywhere for petrol and petroleum lanterns, consists of a knitted fabric of artificial silk which has been impregnated with a solution of Thorium and Cerium Nitrates in the right proportions. When the mantle is tied to the lamp and lighted, the silk burns off, leaving a residue of the Oxides of Thorium and Cerium which glow brightly and emit a brilliant light in the flame of the lamp.

The ash skeleton left on burning is very fragile indeed, and the attempts of the manufacturers have been directed to make it coherent and elastic so that it is able to withstand shocks and vibrations during use. This coherence primarily depends on two factors, *viz.*, the purity of the chemicals used and also on the method employed in fixing the chemical on to the fibre. These points will be referred to again in the later sections.

Raw Materials

The mineral Monazite sand, which occurs in yellow grains along the sea-coast in the State of Travancore, is used commercially for the manufacture of Thorium and Cerium Nitrates. The Monazite is freed from the other minerals associated with it, *viz.*, Ilmenite and Zircon, by means of an electromagnetic process. It is then exported to the European countries and to America for the extraction of Thorium.

As already mentioned above, the Thorium Nitrate required for Gas Mantle manufacture should be extremely pure. Monazite contains only about 7-9 per cent of Thoria, and has thus to be separated effectively from the other metals associated with it. The actual process of manufacture is a closely-guarded secret and the output of Thorium is controlled by a Syndicate.

Mantle Manufacture in India

Since several lakhs of rupees worth of mantles are being imported into India from Europe, attempts have been made over the last ten years to manufacture them in India itself. The process of making mantles being fairly simple and easily adapted as a cottage industry, several firms in Calcutta and Bombay have started manufacture. The machines used for knitting the so-called "Hill" type of hose are of German origin and this is in fact the only large item of expenditure in this industry. It has been found possible to import the Thorium Nitrate used for the mantles from countries like America. The price of this chemical, which was even as high as Rs. 20 per lb. a few years back, has now been reduced to less than half this figure due to various causes.

Recent Developments

As the result of the work of a group of young chemists encouraged by the eminent Indian scientist and Nobel Laureate, Sir C. V. Raman, a factory styled "Bangalore Chemical and Manufacturing Company, Ltd.," was started in Bangalore early in 1933, to manufacture mantles and chemicals required therefor. The factory, the only one of its kind in South India, has been able, by constant effort, to produce and market the highest quality of mantles equal to that of the best imported article.

The superiority of the BCM Mantles over all the other types consists in the special property imparted to it by the method of manufacture, of the ash skeleton being *elastic* after burning. This property imparts a longer life to the mantle and this fact, taken together with the extraordinary brilliancy of the light emitted, has won the appreciation of all users.

The mantles are manufactured in two grades, BCM 934, and BCM JUNIOR, and enjoy great popularity in South India. They are also becoming increasingly popular in the North Indian markets. It is noteworthy to mention that BCM Mantles have found, on account of their high quality, a good export market, and regular orders are being received from such distant countries as Africa, Australia and New Zealand.

The Bangalore Chemical and Manufacturing Company, Ltd., occupies a pre-eminent position in this field inasmuch as the chemicals, Thorium Nitrate and Cerium Nitrate, of high purity required for mantle manufacture, have been produced on a large scale for the first time in India, at their factory.

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This makes the factory quite self-sufficient and there is no need to import any costly raw materials from abroad. It may truly be called "Swadeshi," and this industry therefore deserves patronage and encouragement from all parts of our country.

After extraction of Thorium Nitrate from Monazite sand, the residues are being worked up for Cerium salts. Cerium Oxalate (B.P.), Cerium Oxide (pure and commercial) and Cerium Chloride are some of the chemicals produced. The main use for these chemicals is in the preparation of the sparking metal required for cigar and cigarette lighters. There is a considerable demand for these chemicals in Europe and in Japan and efforts are being made to dispose of the by-products advantageously in these markets.

THE MYSORE TOBACCO CO., LTD.

By K. Natarajan,

Secretary to the Mysore Tobacco Co., Ltd., Bangalore City.

EXPERIMENTS in the years 1935 and 1936 in the cultivation and curing of Virginia cigarette tobacco in certain places in the State having proved successful, the Government of Mysore offered certain facilities and concessions to raiyats who volunteered to construct their own barns for flue curing with a view to interesting the agriculturists in the cultivation and curing of superior quality of cigarette tobacco. Thereafter the whole work was transferred to the Mysore Tobacco Co., Ltd., which came into existence in April 1937, for the purpose of developing cultivation of cigarette tobacco in the State.

In the first year of working i.e., 1937, the Company did good spade work, when 8 Curing Centres (including Whitefield for Grading) were opened with 96 Barns to deal with an acreage of nearly 2,250, brought under cultivation of cigarette tobacco. The income earned by the grower ranged even up to Rs. 200 per acre in the case of best yields in irrigated areas. First dividend of annas 3 per share (face value Rs. 4 per share paid-up) was declared. In the second year, acreage was increased by another 1,500 for which over 130 barns were constructed in addition to the existing ones, and the number of curing stations was also increased to 22. Enlarged acreage was canvassed in irrigated and richer areas to ensure a good crop. A second dividend of annas 4 per share (Rs. 8 per share paid-up) was declared.

In 1939, owing to the sudden outbreak of War, the market conditions were violently disturbed just at the commencement of the season. Sudden increase in ocean freight and war risk insurance and reduction in shipping facilities greatly discouraged the tobacco exporters from offering remunerative sale prices as a result of which the Company suffered a reverse.

By April 1940, the Company had stepped into the fourth year of its working. The number of Curing Centres have been increased to 25, and 259 flue curing barns are now situated in different parts of the State, thus extending the benefits of cultivation of Virginia cigarette tobacco to the raiyats in the several districts of the State, with which object the Company has been started. More than 3,260 acres have already been brought under tobacco cultivation this year. With favourable seasonal conditions, the standing crops as well as curings in most of the Centres are reported to be satisfactory. Grading has begun. Forward contracts have been entered into with prominent cigarette manufacturers and tobacco exporters this year for the entire production at favourable sale prices.

The samples of Mysore Tobacco that were sent to British importers in London earned very good reports regarding the high quality and prospective market for the Mysore Tobacco in the United Kingdom.

To regulate and control the quality of Mysore cigarette tobacco and ensure its ready acceptance in the International markets, the Government of Mysore passed in 1938 a legislative enactment called "The Mysore Cigarette Tobacco Safeguarding Bill."

With the activities expanding gradually, as stated above, the Company would be really accomplishing the objects in view of Government, namely, encouragement to agriculture and industry by affording facilities to raiyats of Mysore to grow a remunerative crop, and also to provide employment, directly and indirectly, to those in and surrounding areas, wherever tobacco is planted.

THE MYSORE SUGAR CO., LTD.

THE sugar factory, established by the Mysore Sugar Company, Ltd., is located at Mandya, the headquarters of the district of that name. Mandya is a station on the metre gauge railway line between Bangalore and Mysore and is 28 miles distant from Mysore and about 60 miles from Bangalore. The factory draws its supplies of cane chiefly from Mandya taluk and partly also from the adjoining taluks of Maddur and French-Rocks. The establishment of a sugar factory in the area was the natural development of the steps taken by the Government of Mysore to protect this tract against drought by the construction of the Krishnarajasagara Reservoir on the Cauvery River.

The Reservoir has a capacity of 44,000 million cubic feet and when the system of canals is completed it will have brought under irrigation 120,000 acres of land in the Mandya, Maddur and Malvalli taluks of the Mandya District. The extent so far brought under irrigation is 60,000 acres.

Experiments were conducted to find out which would be the most paying crop to be raised in the newly irrigated area and it was finally decided that sugarcane would be the most profitable crop that could be grown.

Steps were taken to start a Sugar Factory to convert the large quantity of sugarcane that was expected to be grown in the area into sugar, and the initiative in this behalf was taken by the Government of Mysore as, on the one hand, industrialists were not prepared to invest money in putting up a Sugar Factory before cane cultivation was established on the tract and, on the other hand, the raiyats would not cultivate cane until a market for the cane was assured by the establishment of a factory that would purchase the cane grown by them at reasonable prices.

A joint stock company with a capital of Rs. 20 lakhs was floated with the object of establishing a Sugar Factory in the locality, Government subscribing 60 per cent of share capital with a corresponding preponderance on the Board of Directors. (The authorised capital was subsequently raised to Rs. 25 lakhs, and the paid-up capital is Rs. 21,79,280.) Orders for the machinery required for the factory were placed in January 1933 and the construction was completed well in time to deal with the crop planted in 1933 planting season.

The original plant was designed to have a crushing capacity of 400 tons and to be capable of being expanded to one of 700 tons, employing the Double Sulphitation Process of manufacture of white sugar. The successful working of the factory and the attractive prices paid to raiyats growing cane for the factory brought about within 3 months of the starting of operations a keen and insistent demand on the part of the raiyats to be permitted to grow cane for supply to the factory. This necessitated the immediate expansion of the factory and the management decided to raise its crushing capacity to 1,400 tons per day. The requisite finance was raised by means of a Debenture loan subscribed for by the shareholders themselves, and with the sum obtained an additional plant of a larger capacity was ordered with suitable additions to the Boiling House and to the battery of centrifugals. The mill can, at present, crush 2,000 tons of cane per day, but the Boiling House can only handle juice of about 1,500 tons of cane, and plans have been laid out for the gradual expension of the boiling house also to a capacity of 2,000 tons per day.

The cane that is supplied to the factory by the raiyats for milling is grown over an area of 12,000 acres in the neighbourhood of the factory. The Company enters into contract with the raiyats 12 to 16 months ahead for purposes of getting regular supplies of cane from about five to six thousand raiyats. They also get advance from the Company in the shape of fertilisers to the extent of 8 to 10 lakhs of rupees every year.

The company has its own Farms with an aggregate area of 1,600 acres. These serve to supplement the supplies of sugarcane to the factory and to demonstrate to the raiyats the possibilities of obtaining good yields of cane even from the poor soils generally met with in the tract. The Company

also maintains a large staff of Inspectors and Fieldmen whose duty it is to supervise the cultivation of cane for the Factory, to see that planting, manuring, irrigation and control of pests are properly attended to, and generally to instruct and guide the raiyats in the methods of cane cultivation so as to obtain the best results. That these measures are bearing fruit is apparent from the fact that the average yield of cane on raiyats' lands has increased from 16 tons per acre in 1933-34 to 28 tons in the year 1938-39. In a few small plots, the yield has been 50 to 60 tons.

The price paid to the raiyats for sugarcane has varied with reference to the price of sugar. The policy of the Company has been to pay the cane growers as good an initial price as is warranted by the anticipated price of sugar. If the average price realised in a season is higher than anticipated, the cane grower is given a share in such improvement through a system of bonuses instituted with the approval of Government.

The factory works, on an average, about 250 days in a year and the annual production is about 28,000 tons of sugar.

The establishment of a factory at Mandya has resulted in bringing about substantial improvement in the economic condition of the raiyats and from the year 1933-34 up to date, a sum of Rs. 1,15,00,000 has been paid to the raiyats, representing the value of sugarcane supplied by them to the factory.

The Government are getting an annual revenue of about Rs. 15 lakhs from the industry by way of excise duty. In addition, the Company collects from the raiyats about Rs. 4 lakhs every year by way of land revenue and water rate, on behalf of Government, and also pays to the State Railway over Rs. 3 lakhs per year for railway freight on raw materials and sugar.

The annual production of molasses in the factory is about 9 to 10 thousand tons. With the object of finding an outlet for the molasses, the Mysore Sugar Company has secured the contract for the supply of potable alcohol to the Mysore Government Excise Department and has put up a Distillery as an adjunct to the Sugar Factory. This, in itself, consumes only a small portion of the molasses produced, and with a view to utilising the excess molasses, a plant for the production of absolute alcohol is installed. This plant is now in operation. The Government have passed the necessary legislation making compulsory the use of petrol with an admixture of alcohol in the proportion of 85 : 15. This legislation is now in force in two out of nine Districts. If the Power Alcohol Act is extended to the whole of the Mysore State, a large proportion of the molasses produced would be utilised for the production of absolute alcohol.

The following statement shows the growth of the Company from year to year.

Year	*Area cultivated for supply to Factory*	*Average yield per acre*	*Amounts paid to raiyats as purchase money for cane*	*Cane Milled*	*Sugar produced*	*Excise duty paid to Government*	*Dividend per cent*
1933-34 ...	2,078	16	4,20,330	53,199	5,245	...	10
1934-35 ...	7,411	19	9,66,738	83,383	8,072	2,10,313	11¼
1935-36 ...	9,354	23	24,60,718	2,26,696	23,248	5,88,360	15
1936-37 ...	12,680	26	23,74,823	2,21,571	21,883	7,10,541	10
1937-38 ...	10,680	27	28,42,232	2,61,120	26,375	11,20,730	15
1938-39 ... (9 Months.)	8,583	27	28,09,631	2,31,230	23,230	9,33,933	15

SERICULTURAL INDUSTRY IN MYSORE

Important measures adopted to stabilise the Industry

By H. S. Govinda Rao, B.A.

Superintendent of Sericulture.

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THE Sericultural Industry is of great economic importance to the State. It has been supporting, in its various branches, over one and a half lakhs of families. It is followed by small agriculturists as a subsidiary occupation and affords profitable and steady employment throughout the year for women and children at home and gives occupation to the raiyats during the agricultural off-seasons. The industry is at present practised over about a third of the area of the State and the returns from it are absolutely necessary for the subsistence of a large portion of the population of the State.

The Government of Mysore have been taking active measures to improve and develop this useful and important industry. Action taken in recent years in some of the more important matters relating to the industry is indicated in the following paragraphs.

Mulberry Cultivation

Mulberry, which is the food of the silk-worms is grown in Mysore on agricultural lands. With a view to securing larger yields and better quality of leaves, improvements are being effected in cultural methods and in other directions. The use of seedling cuttings for raising mulberry gardens is being encouraged as these are found very much superior in all respects to the bush gardens raised from ordinary cuttings. Seedlings raised in the Departmental nurseries are being supplied to sericulturists in large numbers, free of cost, and the sericulturists are also being taught to raise the seedlings on their own lands. Growing of mulberry in the form of trees involves less expenditure and ensures successful results in silk-worm rearing by minimising the appearance of certain diseases. To encourage the growing of mulberry trees by sericulturists, Government have sanctioned a scheme for the grant of bonus on a liberal scale. Saplings, fit for being raised as trees, are also grown in Government nurseries and supplied, free of cost to sericulturists willing to raise topes. More than 50,000 trees have already been raised by the sericulturists and are in good condition. The results of experiments conducted in Government Farms in regard to improved cultural operations and manures, are being communicated to the sericulturists. A number of them have already taken to the use of groundnut oil cake and ammonium-sulphate as manures for their garden. The Government Farms stock these manures and sell them to sericulturists at cost price. The use of these manures in rotation with farm-yard manure has resulted in increasing the output of leaves. The Department has been conducting experiments in regard to the following:—

1. Improvement of the local mulberry by selection;
2. Grafting and budding; and
3. Introduction of Foreign varieties.

Seed Supply

One of the most important problems connected with the Sericultural Industry is the provision of adequate quantities of silk-worm seed which is disease-free and which brings the sericulturists suitable returns. In Mysore, the Department of Sericulture is paying great attention to this subject. The two improvements which have helped the Sericultural Industry in Mysore to withstand the growing competition from foreign silks are (1) the reduction in the incidence of silk-worm disease by means of controlled seed supply; and (2) the evolution of hybrids which are more resistant to disease and yield, both as regards quality and quantity, better results than the pure indigenous race. By standardising the work of the sericulturists in the seed cocoon producing areas and by careful control at the source of seed supply the incidence of pebrine in the indigenous race has been brought down to as low

as 0·025 per cent. As the seed cocoons of the indigenous race grown in the Seed Centres of Kunigal and Bidadi could not meet fully the steadily growing demand from the sericulturists, two new seed rearing centres have been started by the Department recently at Kyathasandra (near Tumkur) and at Dodballapur.

The first generation cross breeds evolved by the Department after a series of experiments were first made available to the sericulturists in the year 1925-26. The popularity gained by these cross-breeds can be guaged from the following quinquennial statement of their distribution.

Year.	*Distribution in lakhs of layings.*		
	Mysore	*Cross-breed*	*Total*
1925-26 ...	4·29	0·68	4·97
1929-30 ...	15·71	3·24	18·95
1934-35 ...	20·31	22·40	42·71
1938-39 ...	17·90	87·00	104·90
1939-40 ...	12·85	92·36	105·21

As the preparation of these cross-breed layings involves a good deal of care and attention to scientific details only the grainages which are under departmental control and which possess trained staff, have been permitted to prepare and sell the cross breed layings to the sericulturists. There are at present 10 Government managed and 30 aided grainages which are attending to the preparation and supply of disease-free layings to the sericulturists. As the present demand is mostly for cross-breeds and as the existing grainages have not been able to cope with the entire demand for these layings, 10 more aided grainages are proposed to be started during the current year. Government have also sanctioned the starting during this year of a Government Grainage at Ummattur, which is an important sericultural village in the Chamaraj nagar Taluk.

With a view to invigorating and improving the foreign races of silk-worms that are being used in connection with the preparation of the cross-breed layings, Government have sanctioned the starting of a Silk-worm Rearing Station on the Biligirirangan Hills. Arrangements are being made to start this work, as early as possible.

Silk Reeling

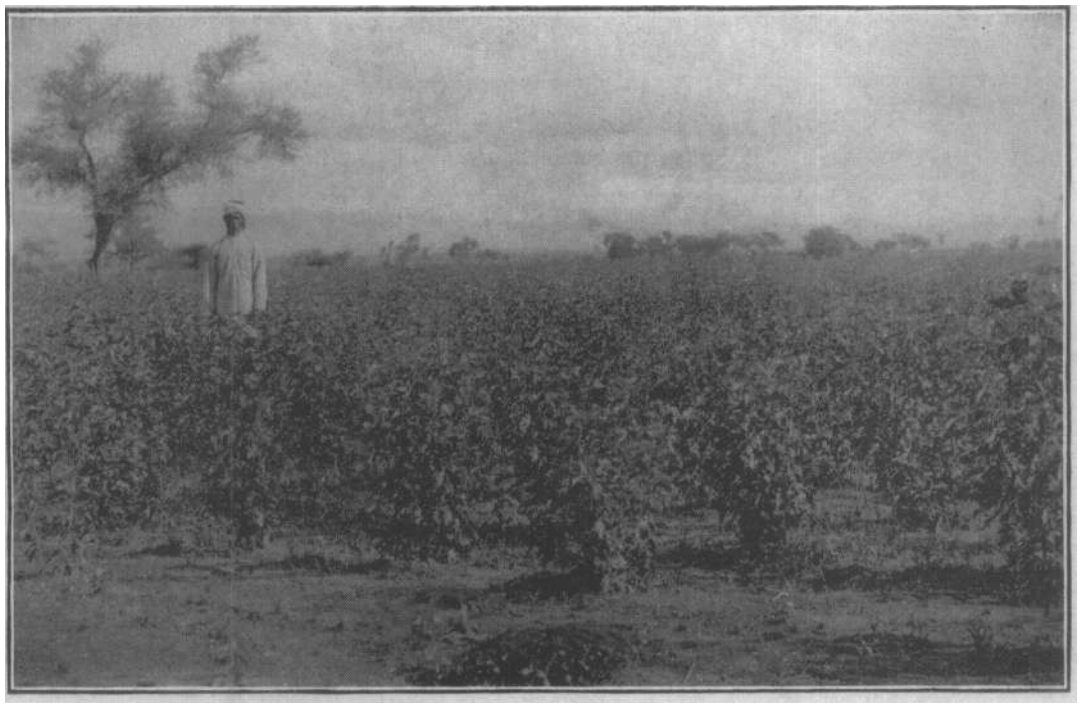
Some years ago, almost all the silk reeled in Mysore was from country charkas. This silk which was coarse and defective in many respects could not fetch suitable prices when, with the advent of foreign silks into the Indian markets, the demand grew for well-reeled higher grades of silk. Attempts made to introduce the Mysore Domestic Basins of the Filature type on a cottage industry basis among the sericulturists did not prove successful. During the year 1937, a Joint-Stock Company called the Mysore Silk Filatures, Ltd., was formed with the assistance of Government, to establish filatures in important sericultural centres in Mysore. The Company has already been working two big filatures, one at T.-Narasipur and the other at Mysore and proposes to start two more branches shortly at suitable centres. A Filature will be started at Channapatna as an adjunct to the Mysore Spun Silk Mills, Ltd. The high grade silk reeled in the existing filatures is being used not only in Mysore but also in other weaving centres in India for the manufacture of superior kinds of fabrics. A large quantity of this silk is also being exported to foreign countries.

As a result of the efforts of the Department, the owners of country charkas have also been adopting measures to remedy the defects existing in their silk and to reel finer deniers of silk which are in demand. As the improvements that can be effected in the silk with the charkas in use with the reelers are limited, an improved charka capable of reeling high grade silk of almost the filature quality has been designed by the Department. A number of these improved charkas have already been purchased and installed by some of the reelers and new sets with additional improvements are under manufacture.

With a view to preparing the field for introducing a scientific system of marketing by popularising the modern methods of classification of silk, Test Certificates are being issued by the Department of Sericulture in respect of all silks sent to them for examination. The Mysore Silk Filatures, Ltd., have been sending all the silk manufactured by them for examination and obtaining the test certificates.

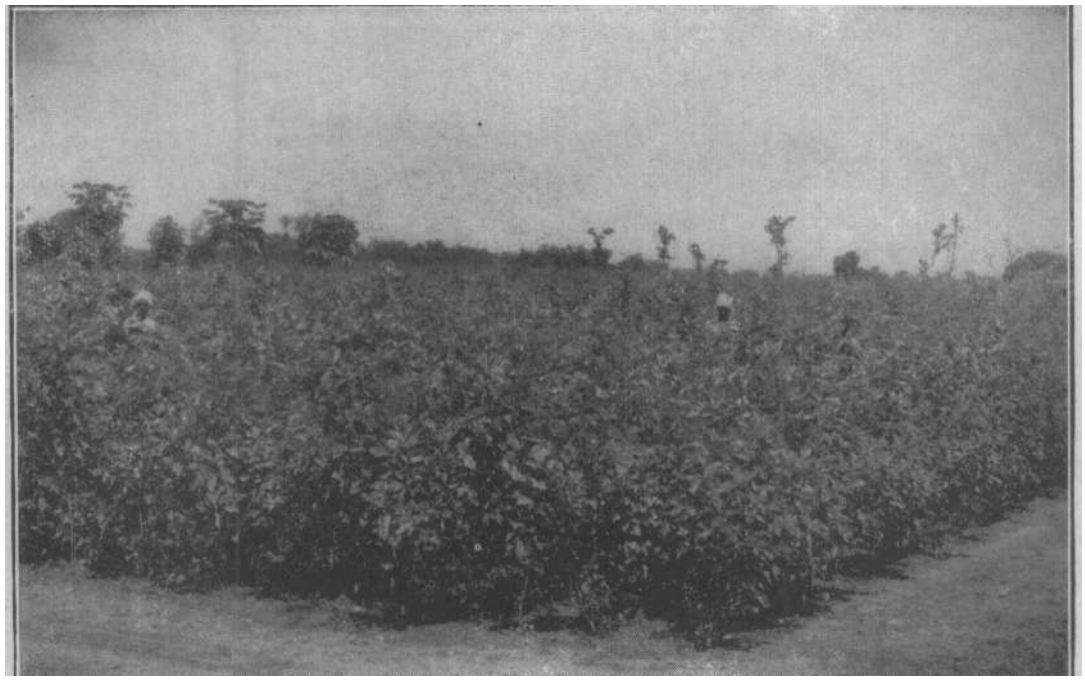
The Mysore Spun Silk Mills, Ltd.

Silk waste is the main raw material for the manufacture of spun silk. Formerly all the silk waste produced in Mysore was being exported to foreign countries. During the year 1936, a Joint Stock Company was formed in Mysore with the assistance of Government for starting a Silk Waste Spinning Factory. The Factory started by the



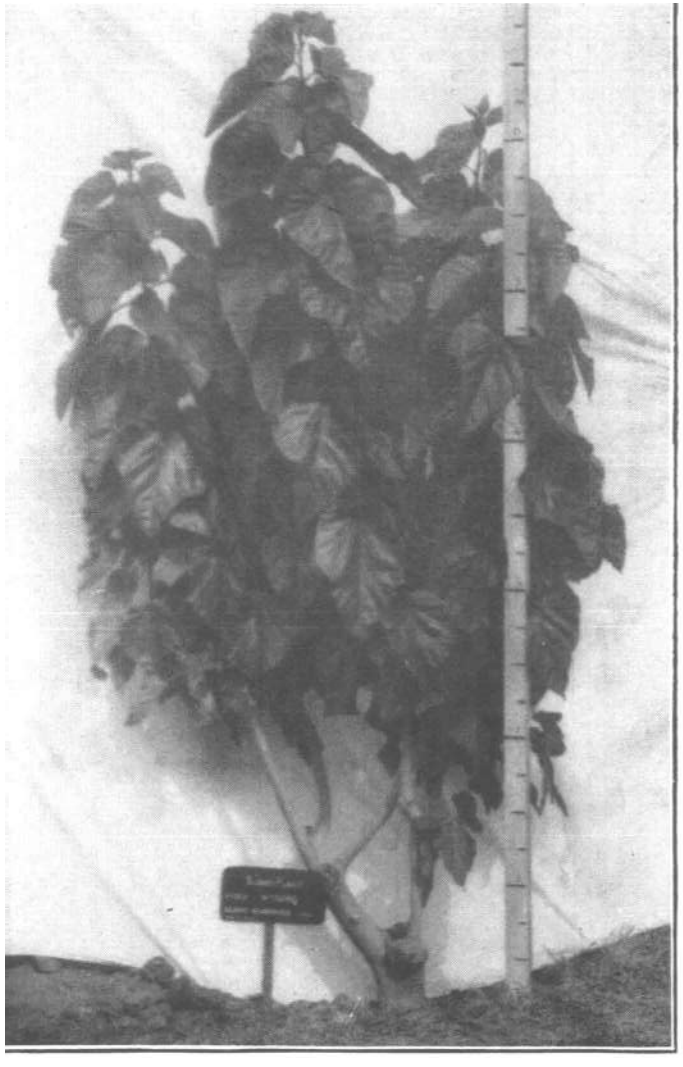
PRIVATE GARDEN, MANGALA—DRY LAND.

Ordinary local cuttings bush. Age of plants: 6 months and 12 days. Height of plants: Maximum 4′—2″; Minimum 1′—3″; Average 3′—2″.



MANGALA GOVERNMENT GRAINAGE GARDEN—DRY LAND.

Local seedlings bush. Age of plants: 6 months and 13 days. Height of plants: Maximum 7′—4″; Minimum 3′—6″; Average 5′—4″.



GOVT. SILK FARM, MYSORE. GRAFTED MULBERRY PLANT. STOCK : MYSORE. SCION : KANRASO (J. 1). DATE OF LAST PRUNING : 14-8-1939. (Photo on 7-11-1939.)

GOVT. SILK FARM, MYSORE : MYSORE SEEDLING PLANTED ON 17-6-1939. (Photo on 7-11-1939.)

Company at Channapatna with up-to-date equipment has been manufacturing large quantities of spun silk and noils from out of the local silk waste and has been finding a ready market for its products both in Mysore and in other parts of India. The successful working of the Factory has helped the local reelers to obtain fair prices for their silk waste.

The Government Silk Weaving Factory, Mysore

To find wider use for the high grade silk produced in Mysore, a Silk Weaving Factory with up-to-date appliances was started by Government in the year 1931. High grade silk fabrics such as Georgettes, Crepes, and Satins which were not being produced in India prior to the starting of this factory are being produced in the factory utilising pure Mysore Silk. The fabrics produced in the Factory are greatly appreciated and are commanding a ready sale. The starting and working of this Factory has fully demonstrated that with the raw material available in India, highest grade silk fabrics can be produced in India with local labour and has paved the way for the starting of such factories in other parts of India.

Report of the Indian Tariff Board on Silk

The report of the Indian Tariff Board on silk submitted to the Government of India as a result of the enquiries made by them into the conditions of the Indian Silk Industry in the year 1938 has recently been published. The majority report of the Board recommended an extension of the protection to the Indian Sericultural Industry for a further period of five years and an all round increase in the import duties on raw silk and allied articles. But the Government of India have only continued the existing import duties on raw silk and allied articles for a further period of two years.

The First All-India Sericultural Conference

With a view to bringing together the experts and actual workers engaged in the sericultural industry throughout India for discussing important problems connected with the Industry, the First All-India Sericultural Conference was held at Bangalore in December 1939, when the members of the Imperial Sericultural Committee and the Sericultural Experts from all parts of India were present. The Directors of Industries and the Sericultural Experts who were in Mysore in connection with the Conference took advantage of the opportunity to study in detail the work in the Government Farms and of private sericulturists. It is gratifying to note that they were greatly impressed by the progress achieved in Mysore in the Sericultural Industry.

GOVERNMENT SOAP FACTORY, BANGALORE

THE Government Soap Factory produced 512 tons of Soap as against 458 tons in the previous year. There was an improvement in the sales during the year, the total sales aggregating Rs. 5,39,330 against Rs. 4,86,385 the year before. The factory continued to face competition both from local and foreign manufactures of soaps.

The demand for New products such as Vanishing Cream, Brilliantine, Pomade, Tooth Paste, Shaving Stick, Biodent, Quick Fix, Boot Polish and Idocure was good.

On account of the International Political situation it was not possible to obtain suitable packing materials for new products from foreign countries. Arrangements have been made to prepare most of the containers required, in our own state.

Investigation on Patchouli Oil obtained from different sources in respect of its physical and chemical constants was carried out in the factory laboratory. A study of the results obtained showed that the indigenous Patchouli leaves were poor in oil content and the odour of the oil therefrom was not quite so good as that from leaves of foreign origin. Attempts were made successfully to grow a few plants from patchouli plant cuttings imported from Penang. Laboratory scale distillation of these leaves have given encouraging results. When sufficient leaves from these plants are available for large scale distillations, the oil will be distilled and examined for its quality. It is still too early to draw definite conclusions regarding the commercial possibilities of extending the cultivation of these leaves on a large scale.

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MANUFACTURE OF EDGE TOOLS AND IMPLEMENTS IN MYSORE

C. K. MENON, B.A., M.MET. (SHEFFIELD), A.I.C.

General Manager, The Mysore Implements Factory.

FROM the city of Mysore northwards is a broad stretch of verdant land extending over hundred miles and comprising nearly a quarter of the State in area where the light of industrialisation has not penetrated to any appreciable extent. Almost in the centre of this vast depressed area called the 'Malnad' stands Hassan 3,100 feet above sea-level and at the highest level of Hassan is situated the Mysore Implements Factory, an imposing architectural land-mark rising out of the rural landscape in agreeable contrast.

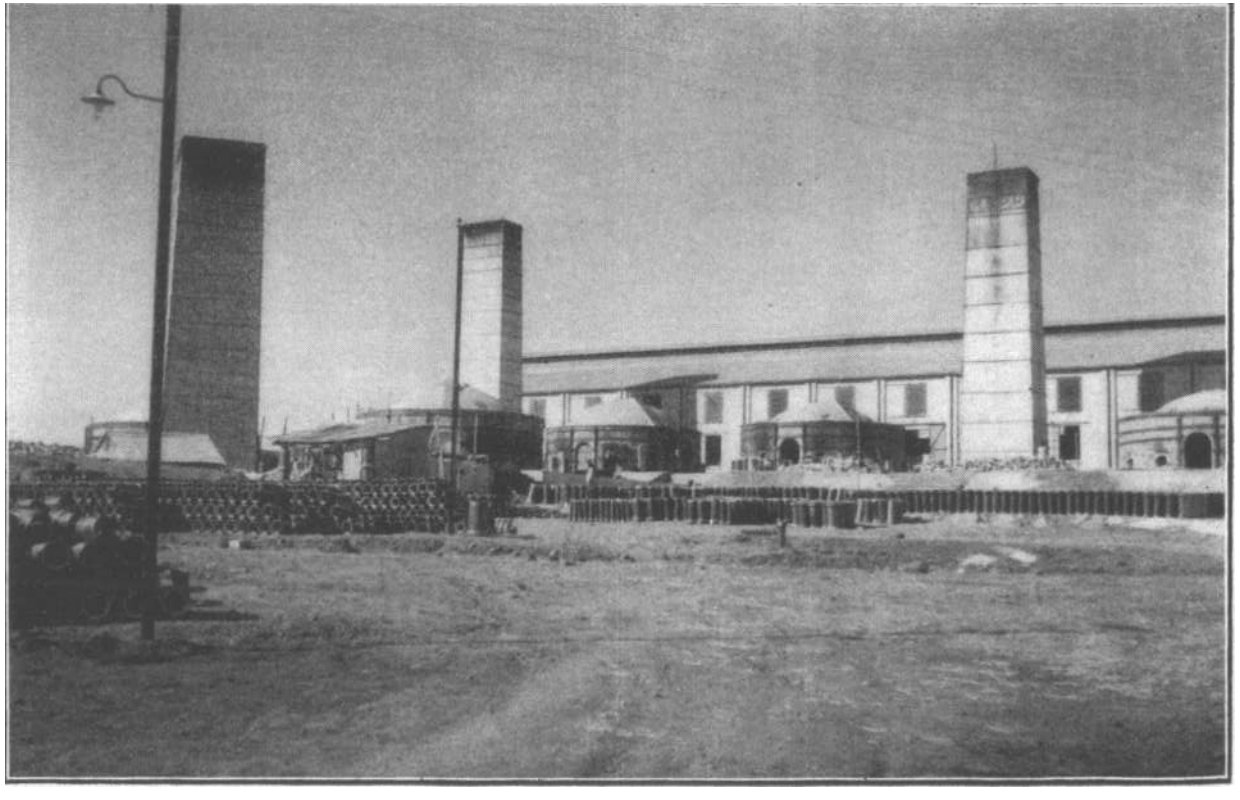
Though one of the smallest of Government schemes with a fixed capital of only 1·5 lakhs the Factory and its adjuncts present a substantial show. The Factory owns a site of 40 acres only a furlong from the Railway Station which is flanked on two sides by Mysore-Arsikere and Bangalore-Mangalore roads. The Factory building itself constructed on modern lines covers an area of nearly 24,000 square feet and in addition there are several quarters for workmen and staff, office and stores buildings, all together forming the nucleus of what may once become a big colony bent on the development of a specialised line of manufacture.

The scheme was sanctioned by the Government in May 1939, but actual construction of the Factory building started towards the end of December 1939. Within 9 months since, the construction and equipment of the Factory were completed and regular operations have already been started. This is the only large and modern factory of its kind in South India, and it has a capacity for employing about 500 hands in one shift.

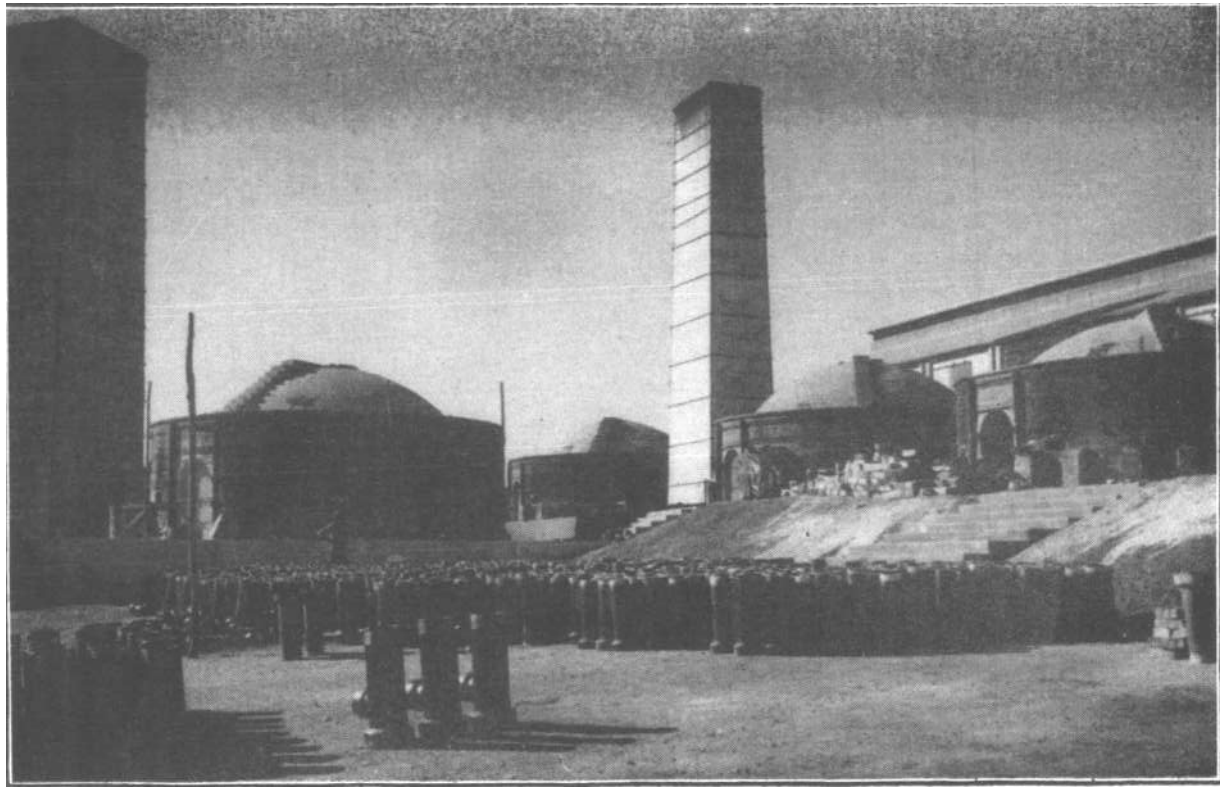
The industrial programme of the Government has been pursued with relentless persistence and what was once a subject of discussion and deliberation, passing through various vicissitudes through a period of over six years has at last taken practical shape in solid steel and concrete structures, and high class tools and cutlery that flow out of Hassan in increasing quantities day after day. To the long list of Mysore products wil be added a hundred more names like "Mysore Knives", "Mysore Scissors" "Mysore Chisels' and so forth, representing sharp and useful products symbolic of the discipline and benevolence of a new era of efficiency and progress.

The scope for the manufacture of tools and implements is fairly unlimited in a country like India with a teeming population engaged in manual labour, and using only hand tools and appliances as against mechanised appliances. Mammooties, spades, shovels, digging forks, felling axes, felling knives, pruning knives, and a host of other articles are required for agricultural purposes, for gardens, for road making, and for the tea, coffee and rubber plantations. In addition the millions of artisans and craftsmen require various specialised tools, and also there is the vast field of household cutlery. All these manufactures require more or less similar technique, and it is the object of this Factory to make all these products. No doubt the present capacity cannot satisfy even a small portion of the demand and naturally the necessity for expansion will soon begin to be felt.

The importance of this indnstry consists not only in its capacity to meet the demand for vital products playing an important part in rural economy but in the training it gives to develop skill, and the specialised technique it introduces leading to the development of the machine industries. It is a difficult line which few have attempted in spite of its scope and potentialities because of the difficult technique involved and the scarcity of skilled men and staff. Indian capitalists prefer the safe routes *via* Cotton, Jute, Cement or Sugar, and it is to the credit of the Government of Mysore that it has shown real foresight and courage. The result is a sound and substantial concern for a small investment but with a great future before it.



MYSORE STONEWARE PIPES AND POTTERIES, LTD.: FACTORY VIEW.



ANOTHER VIEW OF THE FACTORY.

This Factory had its share of luck also. It is now the possessor of a highly paying and useful invention called "The Mysore Stove" (invented by Mr. C. K. Menon which is unique in many respects. This has been patented and the stove is easily becoming popular on account of the high economy and efficiency it gives when burning ordinary fire-wood and wood waste. It has several important features from a scientific and mechanical standpoint but to the average man the hot concentrated flame that it gives without blowing and with low consumption of ordinary fire-wood would be the chief source of satisfaction.

Picturesque Hassan, often called "the poor man's Ooty", is waking from its laziness and lethargy and getting a vision of modern science and its wonders. Round about dozens of villages nestling behind the rolling uplands, long inured to the poverty and drudgery of a precarious life on the fields, hear the clang of power hammers and take it as an invitation to a more enterprising and promising career. Slowely the horizen broadens for these folks and new hopes spring in their hearts and before many years pass Hassan may become noted not only for its cutlery and tools but also for its skilled artisans and craftsmen.

THE MYSORE STONEWARE PIPES AND POTTERIES.

THE clay industries are only next in importance to the agriculture and textiles. From red bricks used for house-building to the baked clay (terracotta) of the village potter, the base is the common clay. For the earthenware, China, Stoneware and Porcelain, the base is the purer variety called Kaolin. The Refractories form a separate class of clays without which the modern development of metallurgy would have been impossible.

In the stoneware variety salt glazed ware is a speciality. Burnt to insipient fusion and glazed by gases at the highest point of burning, salt glazed stoneware is strong, non-porous and acid resisting. It is thus an ideal material for drainage. The manufacture of pipes and specials of this variety has only been recently started in Mysore and is the premier factory of its kind in Southern India.

A company with subscribed capital of four lakhs with various concessions graciously granted by the Government of Mysore was registered on 25th March 1937 for the manufacture of salt glazed stoneware pipes, specials, refractories and other articles. After obtaining the necessary machinery and installing them at the site near Chickbanavar, manufacture was started in November 1938. For the last year and a half the Factory has manufactured pipes of sizes from 4" to 12" diameter and the necessary junctions, bends, etc., and supplied to the value of Rs. 2,06,218 up to 30th June 1940 to the Bangalore Sanitary Bureau, Mysore City Improvement Trust Board, Trivandrum Drainage Works (Government of Travancore), and other sanitary contractors.

Refractories have also been manufactured and supplied to the Mysore State Railway and the Mysore Iron and Steel Works, Bhadravathi.

Special articles have been made for the use of the Mysore Silk Filatures, Ltd., and Mysore Paper Mills, Ltd.

It is intended to add an acid jar making section soon. Other departments such as high class flooring, pots, hospital requisities, plantation needs are also under contemplation.

The raw materials for this industry are mainly local clays, with fuel from the Singareni and Bengal Coal Fields. It is therefore an entirely self-contained industry. It helps to keep not only our towns and cities clean, but is a handmaid to numerous other industries in addition to fulfilling the wants of man in many ways.

THE COFFEE INDUSTRY IN MYSORE.

The Mysore Coffee Curing Works, Limited, Chikmagalur.

By J. Z. Saldanha.

Manager, The Mysore Coffee Curing Works, Limited.

Introductory

"Mysore was the first to grow coffee in India. It now grows more than half the coffee in the country and I hope I may be pardoned for thinking that it grows the best", thus observed our beloved Dewan, Sir Mirza M. Ismail, in his inaugural address to the Indian Coffee Cess Committee. Legend goes to show that about four centuries ago a Muslim pilgrim, Baba Budan, planted the first seed of coffee on the Baba Budan hills. From this seed grew the vast picturesque plantations which now cover nearly all the hill-slopes in Kadur and Hassan Districts. According to recent statistics, there are about one lakh of acres under coffee production in Mysore State. Coffee is one of the seven crops in the State extending over more than a lakh of acres. In India, Mysore produces the major portion of the output, *i.e.*, about 47 per cent and holds the first position as regards the acreage, *i.e.*, about 55 per cent of the total acreage in India. Hassan and Kadur Districts account for more than 99 per cent of the acreage under coffee in the State. The total average annual production of coffee in the state is about 8,000 tons, and some of the finest types of mild coffees are grown in Mysore.

Under these circumstances, it was an anomaly that no serious attempt was made all these years to cure such a large quantity of coffee near the place of production itself. The planters were put to the necessity of sending their coffee outside the State for treatment mainly to the curing factories on the West coast, a hundred miles away, at a heavy cost of transport.

The statistics collected by the Department of Industries and Commerce in Mysore revealed the following interesting facts. Though Mysore grows 8,000 tons of coffee annually, 30 per cent of the total consumption of coffee in the State during 1935-36 was drawn from outside the State. This was due, according to them, to the absence of curing factories in the State; for, coffee that is grown within the State has to be sent outside for purposes of curing and imported again to Mysore for consumption. Says Mr. Swaminathan who prepared this interesting report, "The reason for such importation lies in the absence of curing houses in the growing area..... .....The establishment of a Government aided Coffee Curing Works at Chikmagalur will, among other things tend to eliminate the round about nature of the Mysore Coffee trade."

The planters as also their Associations too felt the necessity of a Curing House in the midst of the growing area and repeatedly brought to the notice of the Government the necessity of establishing a Curing Works here.

A Coffee Curing Works In Chikmagalur

The Government who are always alive to the welfare of the coffee industry which is now passing through a period of grave depression took steps and appointed a Committee in June 1937 under the Chairmanship of Mr. B. S. Raghavendra Rao, M.A. (Hons.), the then Deputy Commissioner of Kadur District, consisting of a few official and non-official gentlemen of the locality with longstanding experience in this line, to enquire in detail into the question of the establishment of a Coffee Curing works in Chikmagalur. This Committee taking into consideration the hardship which the planters were undergoing for want of adequate curing arrangements in the growing area itself, the loss which the planters were incurring on account of the complication arising out of the restriction imposed by the financing agents and most important of all, the difficulty felt on account of want of proper marketing arrangements, thought that a Curing Works at

Chikmagalur would solve to a large extent the above difficulties experienced by the planters. They accordingly recommended the establishment of a Coffee Curing Factory which would go a long way in eliminating the wasteful feature then existing between the harvesting and marketing of the coffee crop. They submitted their report to the Government in November 1937 soliciting the contribution of 20 per cent of the Share Capital, granting of free lands for the construction of the Factory buildings, etc.

The Government were convinced of the soundness of the scheme and felt that the establishment of a Coffee Curing Factory in the heart of the growing area would, besides conferring several advantages on the planter in particular, enable to retain within the State a considerable portion of the outgoing wealth for the benefit of the State and that of her subjects. The Government with a view to safeguard the interest of the planters at once passed orders for the establishment of a Coffee Curing Works on a Joint Stock basis for the purpose of curing, warehousing and marketing of coffee. Chikmagalur was selected as a centre for the Works, because it is situated in the heart of the coffee growing area in the State commanding more than three quarters of the total acreage under coffee within a radius of 40 miles. The authorised and issued capital of the Company was to be four lakhs of rupees divided into 40,000 shares of Rs. 10 each ; the Government nominated a provisional directorate consisting of nine directors including three Government directors, one of whom was to be the Chairman. To ensure the successful working of the Company, concessions such as subscription of 10 per cent of the authorised and issued capital, granting of free lands in the possession of the Government and the waiving of the conversion fines on private lands, if acquired, for the Company, were granted by the benign Government.

As the response from the public was not very encouraging owing to tightness of money market and other reasons, the Government again came forward in a generous way to assist the Company by offering to buy the balance of 9,500 shares still required to make up the minimum subscription necessary to go into allotment. The Government subscription thus rose up to 13,500 shares in the Concern.

With the complete moral and material support of the Government, the Mysore Coffee Curing Works ordered the latest machinery from London and took up the construction of the buildings which are now completed and are in full working order. The Factory is situated in the finest spot in Chikmagalur and commands a bird's-eye-view of coffee estates both in Kadur and Hassan Districts.

How Chikmagalur is suited for Coffee Curing

Situated as it is in the heart of the growing area and accounting for more than three-fourths of the total coffee production of the State, Chikmagalur is the ideal place for the location of a Coffee Curing Works.

The climate of Chikmagalur is admirably suited for the purpose of curing and storing coffee, as the average rainfall here is only about 36 inches and extremes of temperature are not usual. There is also a plentiful supply of labour in the villages round about.

By having his coffee cured in Chikmagalur instead of sending it to distant Mangalore for the purpose, the planter gains several advantages :

(1) The coffee estates being very near to Chikmagalur, the transport charges will be much lower and at a conservative estimate the planter stands to benefit at least Rs. 10 per ton.

(2) A Curing Works near at hand enables the grower to come into direct contact with the buyer which is so essential in the interest of the industry. The planter is also enabled to take a personal interest in the curing and marketing of his produce.

(3) *Marketing of Coffee.*—The most important of all the advantages that will be derived by the planter is, the marketing arrangement which the Curing Works will undertake. Sir Mirza M. Ismail, our Dewan, in whom we have the pioneer of industries in Mysore, rightly observed on the occasion of the Foundation Stone laying ceremony on these Works, "I hope the Mysore Coffee Curing Works will undertake not merely the curing of coffee but, in course of time, its marketing also, for the marketing of a product is a necessary complement to its production." A flourishing market for coffee already exists in Chikmagalur and with the advent of the Mysore Coffee Curing Works, better marketing facilities are sure to be extended to planters. Mysore produces the best strain of coffee and as this type of coffee is concentrated round about Chikmagalur the buyer would be drawn to secure his requirements at the very source of supply. The possibility of curing coffee throughout

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the year gives the immense advantage of regulating the crop for curing and sale over the whole year instead of dumping it at one time on an unwilling market.

Until a few years ago, the best Plantation coffee was taken up by London and the rest of this variety had a ready market in Germany and other coffee drinking countries of Europe, while almost the entire Native coffee was absorbed by France. But during recent years, due to various causes, especially due to the disturbed and unfriendly relations among the European Nations, as also due to the competition from Brazil, Kenya, Costa Rica and other coffee producing countries, Indian Coffee has lost ground in the Foreign markets. The great problem for the Coffee Curing Works will, therefore, be to find a satisfactory market for the disposal of Mysore produce. This they hope to do with the support they have of the Government, who in their turn are taking active interest in the matter as the prosperity of two large Districts of the State—Kadur and Hassan—mainly depends on the prosperity of the Coffee Industry.

The Curing Works also propose to deal with the problems of placing coffee on the market in a finished form—roasted and ground. This will serve as a check on the vast amount of adulteration that is now being practised in the coffee powder trade, and tend to attract more consumers and make them appreciate the flavour and taste of pure Mysore Coffee.

Under these circumstances, there is no doubt that this Curing Factory will serve the special needs of both the planter and the consumer and the success of the Curing Works is thus ensured. The Coffee Curing Works will facilitate the re-establishment of the fair name of Mysore Coffee.

Taccavi Loans.—There is yet another way in which the Government have come forward to assist the coffee planters and that is the sanctioning of the Taccavi Loan. Taking into consideration the hardship attendant on the coffee planters regarding the requisite finance for the upkeep of their coffee estates, the Government sanctioned in the year 1936 a sum of three lakhs of rupees to be distributed among the coffee planters to enable them to maintain their estates, at a low rate of interest *viz.*, 4 per cent per annum, both repayable when the crop is sold and realised. As the condition of the planters did not improve much since then, the loan is revived from year to year. After the inauguration of the Mysore Coffee Curing Works at Chikmagalur, the Government thought it expedient to include a clause in the bond to be executed by the borrowers, requiring them to send all their coffee for curing and sale to the Mysore Coffee Curing Works. This co-operation between the Government and the Curing Works guarantees a supply of raw coffee for curing and sale and also ensures the prompt repayment of the Taccavi Loans granted.

An act worth noting was passed this year, *i.e.*, the Coffee Husk Control Act. This is a measure intended to root out the evil of the sale of the coffee husk for purposes of human consumption. The Statement of Objects and Reasons is as follows:—"Adulteration of coffee with coffee husk has assumed serious proportion of late, and the resultant decrease in coffee sales represents a heavy loss to planters.

"It is considered desirable to prohibit the sale and export of coffee husk by road or rail by suitable legislation. This step is calculated to help in a corresponding degree the coffee industry which is already hard hit, and the bill is designed to achieve the object."

This speaks for itself and it is earnestly expected that the neighbouring provinces will appreciate the lead taken by our Government and take steps to prevent the sale of husk by legislation in their own provinces.

Yet another proof of the way in which the Government of His Highness the Maharaja of Mysore are evincing interest in the welfare of the Coffee Industry is the formation of yet another committee under the Chairmanship of the Revenue Commissioner in Mysore to enquire into the financial condition of the planters and to suggest any measures which will help them to tide over the present depression.

We earnestly anticipate that the researches now being conducted in the laboratories of the Mysore Agricultural Department under the "Coffee Quality Scheme" in relation to deterioration in the quality of coffee sanctioned by the Imperial Council of Agricultural research will result in far-reaching benefits in the interest of the Coffee Industry.

The planters are deeply grateful to their beloved Ruler, His Highness the Maharaja of Mysore and his Government for the keen interest they have been evincing in the welfare of the Coffee Industry and the uniform assistance they have all along

been extending to the planters and for the good turns they have done to improve their condition. By their efforts the coffee planters fondly hope that the reputation of Mysore Coffee will be maintained and enable them to tide over the present period of severe depression.

GOVERNMENT ELECTRIC FACTORY

WITH the year 1940, Government Electric Factory has entered into the seventh year of its existance. It marks an era of re-organization, prosperity and development in all directions.

Though its essential activity consists in the manufacture of Electrical products such as Distribution Transformers, Bakelite Electrical Appliances and Street Light Fittings, etc., it is running several other important branches of Industries which are pioneer attempts of their kind in South India.

Our manufactures consist of the following.

Plastics:—All kinds of synthetic resin moulded articles known under the trade name BAKELITE, consisting of Tableware, Toiletware and advertising novelties, Stationery requisites, Bottle caps, Cut-outs, Ceiling Roses and Galleries of sizes, etc. These products have carved a name for themselves all over India for their quality.

Transformers:—The advent of War has given a further fillip to the production of transformers. They have a high reputation for efficiency and are always sold under cover of guarantee. We are at the moment equipped to manufacture, Single and Three phase transformers, up to 22,000 Volts and 200 K. V. A. Repairs of transformers are also undertaken at moderate cost and to the satisfaction of our numerous customers.

Hardware:—We manufacture all sizes of Black Bolts and Nuts, Rivets and Galvanized Bolts and Nuts, Straps, etc., for general Engineering purposes and Electrical appliances respectively. We also manufacture strong Hasps and Staples, Box handles Trunk carries, etc., for the trade.

The Government Porcelain Factory, the Mysore Iron and Steel Works and the Mysore State Railway are amongst our important customers.

Tools:—We have one of the best equipped Tool Shops in India capable of producing several kinds of Tools, Dies and Moulds for Porcelain Glass, Soap, Metal Pressing and Plastic Industries. The services and facilities afforded by this Section to several sister industries in and outside the State is immense and we are always full up with the work.

Instruments:—We manufacture amongst Scientific Instruments, Surveyors' Dump Levels, Prismatic Compass, Drawing Boards, T. Squares for Civil Engineers and various apparatus suitable for Physics and Chemistry Laboratories of High Schools and Colleges.

Water Meters:—We have established a Water Meters Section about three years back. The spade work done in this Section in training the staff in successfully tackling the rather skilled and precision work as a clock work mechanism is very good. The only difficulty was in getting one or two items of semi-finished articles from abroad, due to the incidence of War. The question is being investigated if they could be made locally. We expect to turn-out very good work.

Besides the above activities, we have a Machine Shop and its auxiliary Sections such as Smithy, Foundry, Fitting and Pattern Shop, where all kinds of castings in Iron, Gun Metal, Brass, spare parts of Machines, etc., are prepared as specified by the customers. We have also made for the trade pillar type Drilling Machine, Capston Lathe and Hand Screw Presses of sizes.

The requirements of the Cottage Industries have not been overlooked. We have in stock large number of Charkas, Spindles, Thaklies, etc., useful for spinners. Special machinery for small industry are also made to the specification of our customers. Electro-plating with Nickel, Chromium and Copper and oxidising are also undertaken.

Researches are being conducted in the manufacture of Switch-Gear, Induction Motors, etc., in the first instance with a view to develop these lines in the near future.

Sales during 1939-40 amounted to *Rs. 3,43,014*.

THE MYSORE CHEMICALS AND FERTILISERS, LTD.

By H. K. Rama Iyengar, M.A. (Hons.)
Secretary and General Manager.

THE Government of Mysore had for a long time under consideration a scheme for the manufacture of Sulphuric Acid which would help the establishment of heavy Chemical Industries in the State. When the Sugar Factory was established at Mandya, there was a considerable extension in the cultivation of Sugar Cane and it was responsible for a phenomenal growth in the demand for Ammonium Sulphate imported from outside. It was an opportune moment for pioneering the new Industries—the manufacture of Sulphuric Acid and of Ammonium Sulphate.

The Government of Mysore therefore afforded facilities for the establishment of this Industry on an adequate scale and this Company was accordingly floated with a capital of Rs. 25 lakhs in the latter part of 1937. The rated capacity of the Plant installed by the Company is 9,000 tons of 100 per cent Sulphuric Acid and 7,200 tons of Ammonium Sulphate a year. The Factory is located on a suitable site opposite to the Belgula Railway Station, on the Mysore-Arsikere line and on the way to Krishnarajasagar. The Mysore Government granted several valuable concessions—the more important ones being the subscription to the share capital of the Company, and the supply of water free of cost and of electrical energy at a low rate.

Before proceeding further, it is necessary to explain the nature of the plant installed at Belgula and the importance of the Industries undertaken. Amongst the several elements that are necessary for the enrichment of the soil, the three most important ones are Nitrogen, Phosphorous and Potassium. It has been the practice to supply Phosphorous in the form of Superphosphates and Potassium in the form of Nitrates. Nitrogen is supplied in the form of oil cakes and farm yard manure—available to a limited extent only and more recently in the form of Sodium Nitrate, Calcium Cyanamide and Ammonium Sulphate. The latter is a salt produced by the combination of Ammonia and Sulphuric Acid. Ammonia in turn, is a compound of Nitrogen and Hydrogen.

Though Nitrogen exists in abundance in the atmosphere, it is a very inert element and its fixation in Chemical Compounds has been one of the triumphs of Modern Chemistry and Chemical Engineering. There are a number of processes available for the synthesis of Ammonia and their common feature is the application of the principles of catalysis to combine Nitrogen and Hydrogen to produce Ammonia.

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The manufacture of Ammonia and of Sulphuric Acid are accepted everywhere as national industries of prime importance both in times of war and peace. From Ammonia and Sulphuric Acid, Ammonium Sulphate, one of the most valuable nitrogenous fertilisers is produced. Synthetic Ammonia is also a basic chemical used for the production of Nitric Acid which is indispensable for making explosives used in war, or dynamites used for blasting in peace time, and also for the production of other chemical fertilisers, like Nitro-chalk. Ammonia as such is used in textile mills and in the manufacture of Pharmaceuticals in small quantities.

The plant installed at Belgula is the only one of its kind in India and is also one of the most up-to-date units for making synthetic ammonia and also of "Oleum"—fuming Sulphuric Acid. The plant for making Sulphuric Acid is designed on most up-to-date lines. It may be noted that the installation sometime ago of a plant in West Ham, England, similar to our plant and of a like capacity was heralded by Technical Chemical Journals with great enthusiasm and approbation.

The erection of the entire plant and machinery at Belgula was completed by the end of 1939 and the regular operations were begun early in this year. The plant has been working up to its full capacity since

the middle of April and the Factory has been doing good business as its products have been appreciated by the consuming public and are much in demand.

Investigations for the manufacture of superphosphates for which there is a growing demand in the State are being carried out.

The ramifications of the Heavy Chemical Industries are well known. Another Industrial Concern has been established in the neighbourhood for the manufacture of several chemicals by obtaining Sulphuric Acid from the Mysore Chemicals and Fertilisers. Reference may also be made to the plant that is being installed in the vicinity for the manufacture of Bi-chromate of Soda.

The important Key Industries referred to above could not have been pioneered in Mysore, had it not been for the timely and generous assistance of the Government of His Highness the Maharaja of Mysore.

PAPER INDUSTRY IN MYSORE

THE Government of His Highness the Maharaja of Mysore sanctioned the establishment of the Paper Industry in Mysore in April 1936. A Joint Stock Company was floated for the purpose. The foundation-stone of the factory buildings at Bhadravati was graciously laid by His Highness the Maharaja of Mysore on 1st April 1937. Regular operations commenced from April 1939.

The Mill is situated at Bhadravati on the banks of the perennial river Bhadra, which ensures an ample supply of water. It also commands other facilities, such as, nearness to the forests where bamboo is grown in abundance, and labour and workshop facilities. It also forms a convenient distributing centre not only for the State of Mysore but also for the Southern Mahratta country and for parts of Hyderabad and Madras.

The Mill occupies an area of about 45 acres and comprises modern pulp and paper making machinery, a rag pulp preparation equipment, a Soda Recovery and an Electrolytic Bleach Liquor Preparation Plant, with the auxiliary water, steam and power plants. Salt Recovery equipment for regaining caustic soda and salt from the Electrolyser cell effluent has also been added.

Recently a small plant for manufacture of cardboards was installed as an adjunct to the Mills.

The Mill has a daily rated output of 17 tons of bamboo pulp, 2½ tons of rag pulp and 15 tons of high-class writing, printing and typewriting papers, Banks, Bonds, Badamis and other varieties, glazed and unglazed. The products are marketed under the registered trade mark "Bison Brand."

On the outbreak of war in September 1939, the local newspaper industry was put to much hardship and inconvenience owing to the non-receipt of newsprint which is the raw material for newspapers. The Mills therefore began manufacturing a low-priced paper called "Emergency Printing" which is being supplied to the local newspapers and others in adjacent areas as a substitute for imported newsprint. The *Mysore Gazette* is now being regularly printed on the "Emergency Printing" paper supplied by the Paper Mills. The Mill is designed and equipped on an all-bamboo basis.

The products of the Mysore Paper Mills are well appreciated for their quality and command a ready market throughout South India. Since the outbreak of war, the Mills are finding it difficult to meet the demand for their products.

The establishment of this industry in this part of South India has been more than justified. Within the Factory, the Mills employ more than 100 educated men as operatives and about 500 workers skilled and unskilled. It further provides employment to more than 500 persons in the forests engaged in the extraction of bamboos. A number of contractors find employment in supplying the subsidiary raw materials, such as, rags and waste paper to the Mills.

The Mills have abundant supplies of the primary raw material, *viz.*, bamboo, and satisfactory arrangements have been made for regular supply of chemicals and other materials.

A regular Paper Town has grown up at Bhadravati for the accommodation of the staff and labour employed in the Mills. It is provided with all the usual modern amenities like protected water-supply, electric lighting, sanitary arrangements, co-operative society, medical and maternity aid, etc. It is understood that the Mills have overcome the usual troubles incidental to the starting of operations and the operations are being standardised and improvement secured in all directions.

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SANDALWOOD OIL INDUSTRY IN MYSORE

AMONG the number of Industrial Concerns started by the Government of Mysore for utilising the raw materials grown in the State and for providing employment for the local people, Sandalwood oil factory is the one pioneer concern. During the period prior to the last Great European War, Mysore was selling sandalwood by public auction. The average quantity sold per annum during the eleven year period from 1906-07 to 1916-17 was 2,010 tons. The average rate per ton of sandalwood realised was Rs. 714. As a result of outbreak of war, the demand for sandalwood considerably fell and the situation demaded close investigations into the causes.

From the year 1917-18 the policy of selling sandalwood was abandoned. Distilling the wood and putting sandalwood oil for sale in the market was thought advisable. On 10th May 1916, distillation on a commercial scale was started at Bangalore. Following this a bigger factory was constructed at Mysore and work was started on 30th August 1917. Both the factories worked till the end of December 1930 when the Bangalore factory was closed and the distillation work was concentrated in the Mysore factory after effecting some more improvements to the equipment. The plant now installed is capable of producing on an average of lbs. 13,500 of sandalwood oil per month. The total investment on the factory is Rs. 7,15,000. The factory is now an important place in the itinerary programme of every tourist and visitor to Mysore.

The sandalwood oil manufactured in the factory is supplied to all the markets of the world with the exception of America.

The Mysore Government has established arrangements for supplying the American market with oil distilled in America owing to reasons of cost of marketing our oil in that country. Messrs. W. J. Bush & Co., of New York are our distillers and sales agents. To look after the business, both in Europe and America, Government have appointed a Trade Commissioner for Mysore with headquarters at London.

Business in China, Japan and India is done through agents. The names and addresses of the agents are given below. In the year 1928-29, a record sale of lbs. 244,983 was made In the four subsequent years up to 1933-34 sales fell down by nearly 50 per cent but they gradually rose to lbs. 215,069 in the year 1936-37. Owing to general depression in trade and the hostile political conditions, there has again been decline in the subsequent years' sales.

As against the capacity of production of lbs. 13,500 of oil per month at the Mysore factory, the production during the last year was limited to lbs. 8,200 per month on an average. Only 896 tons of sandalwood were crushed and distilled during the year 1939-40. The American programme of production too was carefully regulated to the market needs. To stimulate sales of Mysore Government sandalwood oil, special rates were quoted and the general schedule of prices was brought down from Rs. 11-8-0 to Rs. 10-8-0 a lb.

Indian Agents.

1. Messrs. M. A. T. Acharya & Co.,
   Sri Krishna Buildings,
   Avenue Road, Bangalore City.
   (Agents for South India, Bombay Presidency.)
2. Messrs. Karnatic Agencies, Ltd.,
   84A, Clive Street, Calcutta.
   (Agents for Bengal, Bihar & Orissa.)
3. Messrs. Mysore Products, Ltd.,
   191, Princess Street, Bombay.
   (Agents at Bombay.)
4. Messrs. Lala Banarsidass Khatri
   and Beniram Moolchad,
   Perfumers, Kanauj (U. P.)
   (Agents for U. P., C. P., Rajaputana and Punjab.)

Foreign Agents.

1. Messrs. Brunner Mond & Co. (Japan), Ltd.,
   No. 72, Kyomachi, Kobe (Japan).
   (Agents for Japan.)
2. Messrs. Imperial Chemical Industries
   (China), Ltd.,
   133, Szechuen Road,
   Shanghai (China).
   (Agents for China.)
3. Messrs. Narayanaswamy & Sons,
   Laxmipuram, Mysore.
   (Agents for Singapore).

MYSORE VEGETABLE OIL PRODUCTS, LTD., BANGALORE.

Details of sales effected from the year 1936-37 are given below in lbs. :—

	1936-37	1937-38	1938-39	1939-40
Europe ...	71,588	60,450	53,424	46,851
U. S. A. ...	68,130	46,170	29,900	50,550
Canada ...	4,477	5,286	4,110	2,151
Japan ...	35,049	11,600	775	548
China ...	4,395	3,513	3,975	2,806
Australia ...	400	275	300	250
India and other countries ...	30,469	34,137	35,671	42,369
Total ...	2,14,808	1,61,431	1,28,165	1,45,525

The following is a brief description of the process of manufacture of the oil.

The heartwood is crushed into powder, neither too coarse nor too fine. The distillation is carried out in tall cylindrical copper vessels ("Stills"). These 'stills' are provided with false bottoms on which the powder is charged. Steam is admitted from the bottom of the still and during its passage through the wood it breaks up the oil cells and carries over the oil. The vapours of oil and steams are led through the tubes of a condenser round which cold water is continuously circulating. The condensate runs into a tinned copper pot provided with an outlet syphon pipe, one end of which reaches the bottom, the other end projecting through the top at a point a few inches from the top. The distillate separates into layers of oil and water. The top layer consisting of oil is drawn off periodically and the water flouring out is led through a hot-well where it is mentioned and fed back to the boilers for production of steam. The oil as removed from the collecting-pot contains water and generally some dirt. It is allowed to stand for sometime and the water which separates and collects at the bottom is drawn off. Traces of water and dirt which the oil still carries are removed by drying the oil in a steam-jacketted vacuum pan and filtering under reduced pressure.

Sandalwood is held in high esteem from very ancient times on account of its delightful fragrance and anticeptic properties. In the East, in addition to the use of the oil as a base for attar and essence, the wood is used for religious ceremonies, for carving and for decorative work. With the advance of civilisation the uses to which the oil can be put are increasing. It is employed in medicine. On account of its high boiling point and fixative value, large quantities of oil are used in the manufacture of soaps and attars. The oil also enters into the composition of several classes of powders, creams, perfumes and similar toilet and beauty preparations. In these industries the Mysore Sandalwood oil is highly esteemed for its purity, fragrance, uniform body and excellent general quality.

By "Sandalwood Oil" without any further classification is meant, in Commerce, the East Indian Sandalwood oil extracted from Santalum album. There have appeared on the market, lately, several other oils passing under the same or similar names, such as "West Australian Sandalwood oil," "African Sandalwood oil," "West Indian Sandalwood oil," etc. But these are products of different species of wood altogether and are decidedly not equal to the East Indian oil in all essential qualities.

THE MYSORE VEGETABLE OIL PRODUCTS, LIMITED

THE Mysore Vegetable Oil Products, Ltd., incorporated in 1938 under the auspices of the Mysore Government, has just completed one year of working.

The Company is interested in the refining, hydrogenation and deodorising of groundnut oil, which is available in large quantities in the State. For this purpose most up-to-date American and Continental machinery has been erected. The hydrogen required in the processing is obtained electrolytically and the by-product oxygen is sold to the Indian Oxygen and Acetylene Co., Ltd., who distribute it to all parts of Mysore and its immediate neighbourhood for welding and for use in hospitals.

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THE GOLD MINES OF KOLAR

By K. Duraiswamier, B.A., A.I.M.M.,
Chief Inspector of Mines in Mysore.

THE occurrence of gold in the vicinity of the villages of Oorgaum and Marikuppam in the Bowringpet Taluk of the Kolar District in Mysore State has been known from very ancient times and though a number of pits were sunk down to the water level to mine the auriferous quartz, most of the gold was recovered by washing the sands in the nullas.

It is stated that Tippu Sultan had a certain amount of mining carried out in this area during his reign but the first authentic record is to be found in the report of Lt. John Warren of H. M. 33rd Regiment, who conducted a survey of the eastern boundary of the State in 1802. About 70 years later, Mr. M. F. Lavelle obtained from the Government a monopoly for prospecting for gold in the Kolar District with the option of selecting certain blocks for mining purposes. In 1876 Mr. Lavelle handed over his rights to the Kolar Concessionaries.

Regular Mining Work

Between the years 1880 and 1884, several companies were formed and regular mining was commenced by sinking shafts, some of which reached depths over 200 feet, but without success, with the result that all but the Mysore Gold Mine were practically closed down. Through the efforts of Mr. John Taylor, the remaining capital of this Company was spent in a last effort, and in 1885 the now famous "Champion Lode", which has yielded over £86,000,000 worth of gold, was discovered. Encouraged by the success of the Mysore Mine, the other dormant mines began to revive and since 1885 there has been steady production.

The re-opening of these mines came at a most opportune time as the world production of gold at that period was showing a gradual decline owing to the exhaustion of the Californian and Australian depositions and the famous gold deposits of the Rand, Rhodesia and Canada had yet to be discovered. During 1817 there were 15 mining Companies working on the Kolar Gold Field. Of these, five were producing gold and paying dividends, six were producing gold but not paying dividends, and the remaining four were working and not producing gold. Gradually they dwindled to five mines which produced gold for over 50 years and at present there are only four Companies which are producing and paying dividends.

Gold mining on this field, like every other mining centre in the world, had to pass through many vicissitudes and at the beginning it was predicted by one of the early mining engineers that the bottom of the reef would be reached in a very short time owing to the peculiar geological structure of the area. But the persistence of the reef in depth has definitely disproved this theory and two of the Kolar Mines today have reached depths very nearly equal to the deepest mines in the world—over 8,600 feet below surface.

Commencing with 9 ozs. of gold valued at £37-13-5 in 1882, the production of the Kolar Gold Field reached a maximum of 556,527 ozs., valued at £2,373,457 in 1905. During 1939, 314,501·313 ozs. of gold were produced and the value realised amounted to £2,437,395.

Mining Process

The gold-bearing ore on the Kolar Gold Field occurs in the form of a reef or vein of quartz which outcrops to surface and extends downwards to a great depth. The strike of this reef is north and south and the dip varies from 35° near the surface to almost vertical in the lower levels. The width of the reef varies from a few inches to nearly 20 feet in rare cases. The exploring of the reef in depth is done by sinking main and subsidiary shafts which are connected by levels at definite intervals. The ore body is divided into working blocks by sinking winzes or small shafts through them. Excavation is done by stoping by hand-drilling or by means of pneumatic drills of various types. The broken ore is passed down to the haulage level chutes, where it is loaded into trucks and trammed to the main shafts, by hand or by electric storage battery locomotives. It is then hoisted to surface through the main shafts.

All the important shafts are vertical (circular or oval), lined in brick or concrete. These shafts,

though expensive in the beginning, require little repairing and facilitate the passage of a large quantity of air for ventilating the mine workings. In addition, large electrically driven fans are in use to ensure an adequate supply of air underground.

Cooling Plant

In order to improve the ventilation in bottom workings in the Oorgaum Mine, which has attained a depth of over 8,600 feet below surface, an air-conditioning plant of the Ammonia Compressor type using brine in coil type coolers, manufactured by Messrs. J. & E. Hall, Ltd., Kent, England, was put into commission in August 1938. It is of sufficient capacity to eliminate 13,674,000 B. T. Us. per hour when cooling, 150,000 c. ft. of air per minute from an incoming temperature of 73°F. wet bulb to 40°F. saturation. The working of the plant has resulted in considerable improvement in the underground conditions

An idea of the magnitude of the underground operations can be gathered from the fact that up to the end of 1939 more than 493 miles of tunnels have been driven and 34 miles of shafts sunk. Two of the mines are at present operating at a depth of over 8,600 feet vertically below surface.

Metallurgical Process

The ore on being hoisted to the surface is taken to a sorting and crushing station. At this station a certain percentage of "waste rock" is discarded and the coarse or large stones are crushed in crushers of the jaw type, the "fines" having been previously eliminated by screening. The combined "coarse crushed" and 'fine' ore are conveyed to the stamp mill and on the way pass over a weigh-bridge. The stamp mill of the Californian pattern, aided by water, pulverises the ore and the resultant "pulp" issues through woven wire screens with nine holes per square inch, and passes over inclined tables covered with blanketing to arrest the free gold.

The pulp passing over the "blanket tables" is pumped by centrifugal pumps to cone classifiers automatically controlled. The underflow from the cones is fed to the tube mills and the overflow from the cones is sent to the cyanide plant for the recovery of the fine free gold. The discharge from the tube mills passes over blanket machines. The material retained on all blankets, called "concentrate", is passed over copper plates (usually 9 feet long and 5 feet wide) amalgamated with mercury; the gold remains on the amalgamated surface and becomes gold amalgam. The concentrate from which the gold has been extracted by amalgamation, joins the previously mentioned cone overflow at the cyanide plant. The amalgam thus produced is retorted and sponge gold and mercury are recovered. The sponge gold is melted into gold bars and the mercury is used again for amalgamation purposes.

Cyanide Plant

The cyanide plant consists of collectors, agitators and filter plant. In this plant sodium cyanide and lime are added to water in various stages and in this solution the remaining particles of gold are dissolved forming gold sodium cyanide solution which flows to extractor boxes containing zinc shavings which chemically react precipitating gold and forming zinc sodium yanide. This precipitate is dried and then fluxed with manganese dioxide, borax and soda and smelted in refractory crucibles in an oil-fired furnace. The bullion obtained contains about 900 parts of gold and 90 parts of silver and parts of other impurities.

The total quantity of fine gold produced from the commencement of operations to the end of 1939 amounts to 19,533,376·952 ozs. valued at £91,161,710-6-10. The total amount of royalty paid to Government amounts to £5,172,293-18-6. The number of persons employed in the gold mining industry during 1939, both below ground and on surface, was 24,371, of whom 331 were Europeans, 563 Anglo-Indians and 23,477 Indians.

Medical service is provided free and a well-equipped hospital with a staff of five European and two Indian Doctors at Champion Reefs and Government Civil and Maternity Hospitals at Robertsonpet serve the whole Field. Electric power supply is brought from Sivasamudra, a distance of 92 miles. A good supply of pure drinking water for the workmen is obtained from a pumping station at Bethmangala, seven miles away. The Companies provide houses for the workmen and there is a Central Welfare Department to provide social amenities. Maternity Clinics have been built in the lines for the benefit of the work people. Schools and Panchayet Courts are established and play-grounds provided.

What was once a tract of desolate waste is now humming with activity. There is a population of over 90,000.

THE MYSORE IRON AND STEEL WORKS

By M. Venkatanaranappa, B. A.

Chairman of the Board of Management.

THE Mysore State was the first Indian State to have an independent geological survey of its own and this survey having disclosed rich and extensive deposits of iron ore in the Kemmangandi Hills of the Bababudan range, amidst a thickly forested area, the possibilities of smelting the ore with Charcoal began to receive attention. After detailed investigation by experts, Government decided in May, 1916, to start a modern Wood Distillation Plant and a Charcoal Blast Furnace for the manufacture of Pig Iron and the bye-products of woods. Bhadravati, a Railway Station on the Birur-Sagar Section of the Mysore State Railway, being situated centrally in regard to supplies of ore and fuel and on the banks of a perennial River, the Bhadra, was selected for the location of the Plant.

The works have now been in operation for seventeen years. The period has been one of unprecedented activity in Iron and Steel as well as in the Wood Distillation Industry throughout the World. The works, though had to pass through many vicissitudes in the early years of its operation, has turned the corner having weathered the storm successfully.

The ore mined in Kemmangandi Hill is brought down to the foot of the hill by a steel ropeway, three miles long, operated by gravity and transported to the Works by the Tramways. The wood received at the Works is split and billetted by power saws to the required sizes and loaded into specially designed steel cars. After being air-dried, these are charged into the Retorts where carbonisation takes place. After 24 hours the cars are pulled out into cooling chambers and the charcoal further cooled for another 24 hours after which it will be fit for being charged to the Blast Furnace.

The ore, Limestone and charcoal are fed into the Blast Furnace alternately in fixed proportions and are acted upon by a counter-current of hot air blown through the stoves into the hearth of the Furnace. The iron which collects at the bottom of the Furnace is cast in sand beds at intervals of 4 hours. Iron cast in metal mould is also supplied.

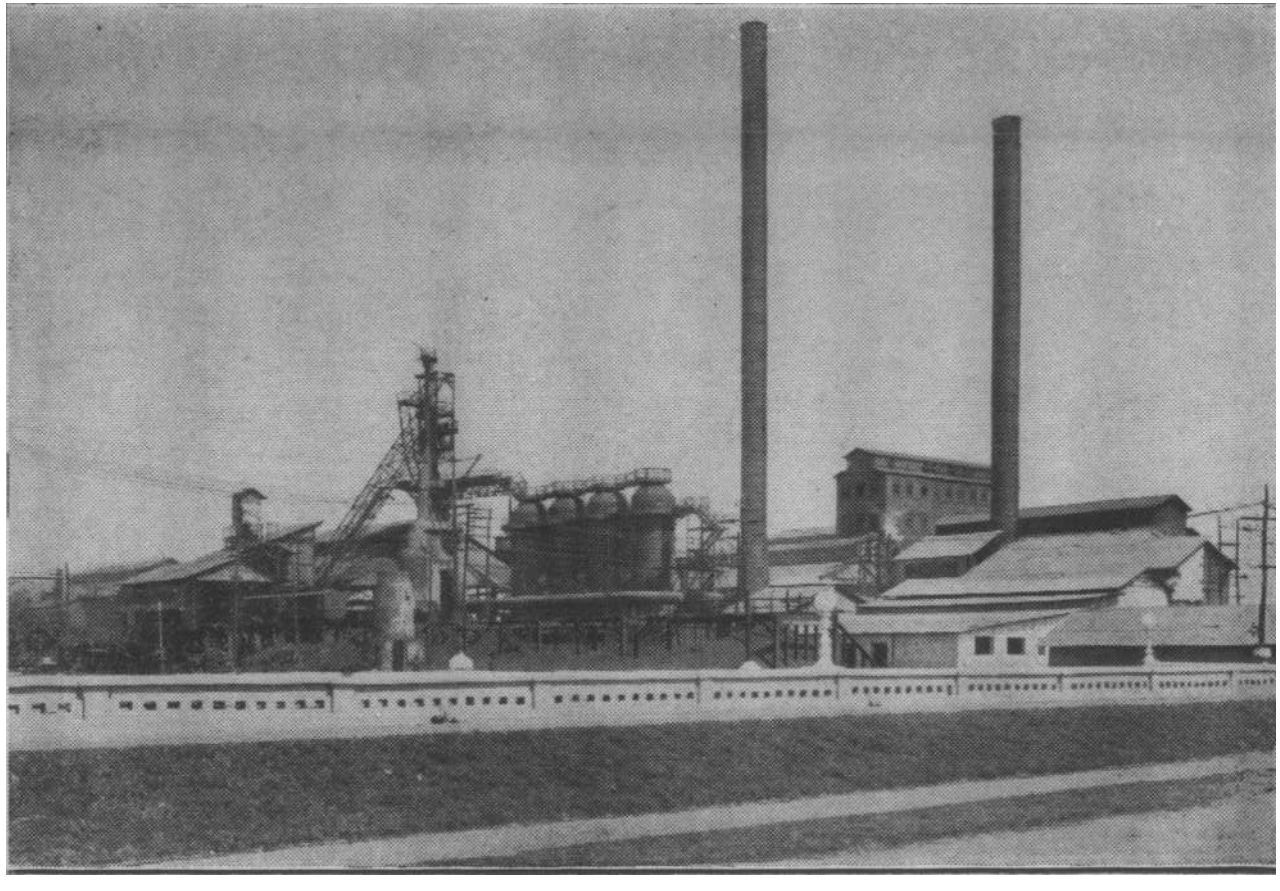
During the period under review, the Blast Furnace has been enlarged from a daily rated capacity of 60 tons of charcoal Pig Iron to 80 tons and the Wood Distillation Plant has also been extended to meet the increased quantity of charcoal required.

Wood Distillation Plant.

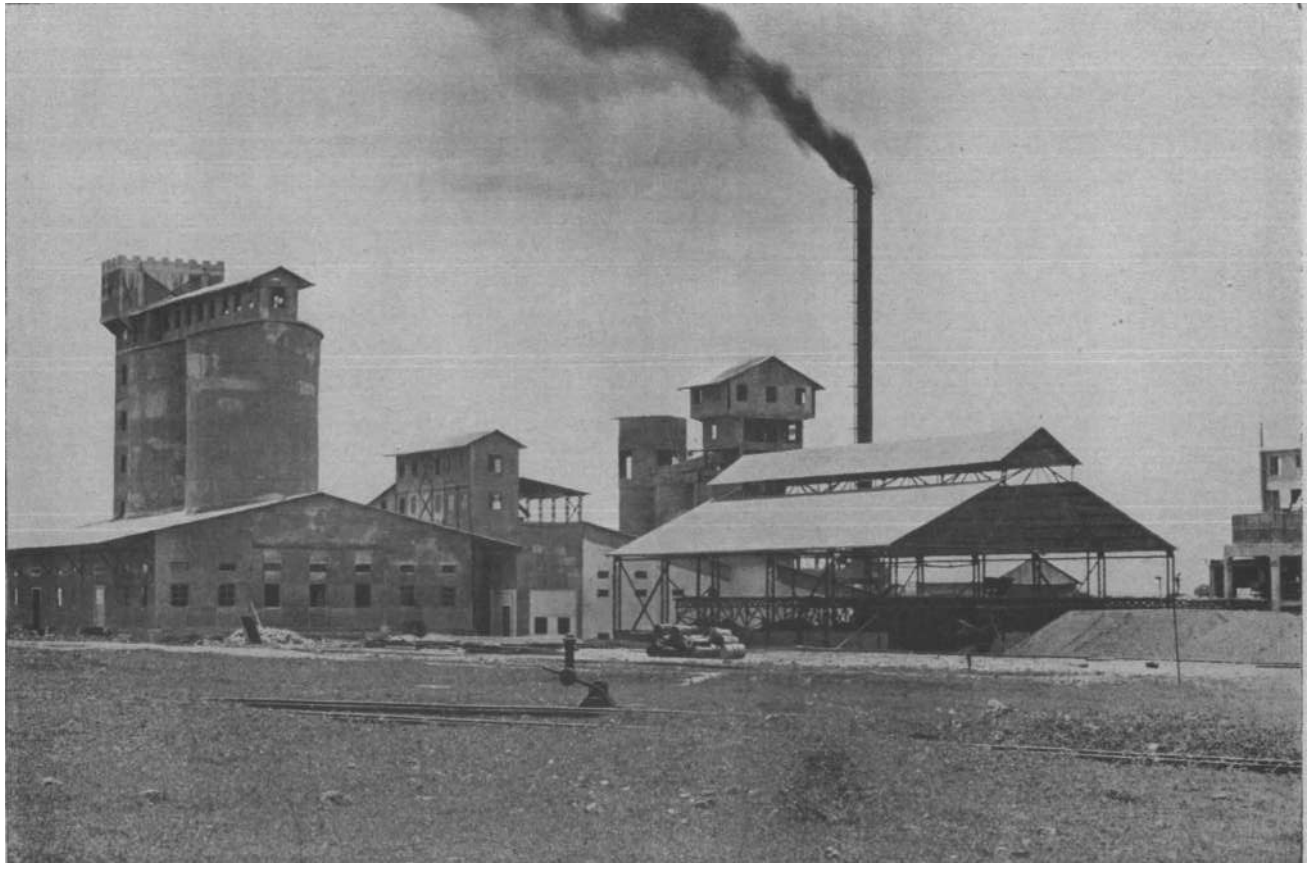
The Wood Distillation Plant, the only one of its kind in India, is the biggest in the whole of the East. It is equipped to carbonise 320 tons of wood per day, yielding about 80 tons of charcoal and proportionate quantities of bye-products. The pyroligneous liquor which is the condensed form of volatile products evolved during the carbonisation of wood is pumped into the Chemical Plant, where, after removal of the Tar and Wood oils by settling and distillation, the clear liquor is neutralised, fractionated and evaporated to dryness to give crude Methyl Alcohol and Acetate of Lime. The crude Alcohol is further re-fractionated to yield Methanols, and Methyl Acetone. A portion of the tar is re-distilled in stills, for the manufacture of Wood Preservatives and Pitch. The phenolic oils and pitch are utilised for the manufacture of Disinfectant called "Kreso" and Black Paint, respectively.

Until recently the plant was being worked only during the monsoon but now it is being reconditioned to be worked partially.

A Pipe Foundry for manufacturing Cast Iron Pipes was started in 1926 to make use of the surplus Pig Iron. The Foundry comprises of two turn-tables with jib cranes mounted in the centre. The moulding boxes are attached to the circumference of the table which is revolved by a motor. The sand and other materials used for moulding and core-making are thoroughly tested and controlled. Suitable mixtures of Pig Iron and scrap



MYSORE IRON AND STEEL WORKS, BHADRAVATI.



THE CEMENT PLANT AT BHADRAVATI.

are melted in the cupolas and the molten iron is poured into the pipe moulds. After they are sufficiently cooled, the pipes are removed from the mould boxes and sent to the Finishing Section for being cleaned, cut and hydraulically tested. The pipes of sizes from 2½" to 38" diameter manufactured conform to British Standard Specifications in every respect and are used for water supply and drainage purposes. Originally of a capacity of 15 to 16 tons per day, the Pipe Foundry was enlarged in 1931 to produce about 35 tons of Water Supply Pipes per day. In order to meet the increasing demands of Pipes for improvements of Public Health, the Pipe Foundry is kept fully busy.

Even with these additions it was not possible to balance the operation expenditure. Therefore, the Government, after further investigation by experts sanctioned the installation of a Steel Plant and the Plant commenced its operation during October 1936. The major portion of the Pig Iron is converted into Steel in a stationary type of furnace of a capacity of 25 to 30 tons per heat and is provided with the usual accessories for charging and casting. Producer gas is used as fuel and the charge consists of a mixture of Pig Iron and Steel Scrap, lime being used as a flux. When Steel of the required analysis is ready, it is tapped into a ladle from which it is poured into ingot moulds. The ingots are heated and taken to the Rolling Mill.

The Rolling Mill consists of two 19" stands and five 11" stands provided with cross repeaters and driven by a flexible motor coupling. An up-to-date mechanical cooling bed is provided with a rotary shear. The Sections manufactured are Mild Steel Flats, round and square bars, re-inforcing rods, Angles and Strips. Rods tested to B.S.S. latest are also being manufactured.

Turning to the side of development on special lines, the works have succeeded in manufacturing chilled wheels for Railway wagons, Ingot moulds for casting small steel ingots, chilled rolls for the Rolling Mills and good quality of fire-bricks, check blocks, steel keys, buffer guides, etc.

The works have started a small Steel Foundry as an experimental measure and the results so far achieved are very encouraging. It is proposed to manufacture carbon steels, axle boxes, anvils and other special steel castings likely to be consumed in the area favourably situated to the works.

The General Foundry and Machine Shop, originally meant as repair shops for the works, have developed into manufacturing sections for the production of castings for engineering and constructional works.

Cement

The Government sanctioned in 1936, the establishment of a Cement Factory as an adjunct to the works, capable of producing 60 tons of Portland Cement per day, using the raw materials available in the vicinity of Bhadravati. The construction of the Plant was completed and operations commenced in the month of August, 1938. The standard "wet process" is adopted.

The limestone is first crushed in a swing hammer crusher. The crushed limestone together with slag and clay slurry are ground to a suitable fineness in a slurry mill and transported to Slurry Silos. From the Silos the slurry is fed into the Rotary Kiln which is fired by pulverised coal injected into the kiln by a high pressure fan. The slurry is calcined to Cement Clinker in the kiln and after storage in the Clinker shed is fed along with the requisite proportion of Gypsum to a Cement Mill where it is finely ground. The finely ground cement is conveyed to Cement storage silos by mechanical transport. The cement is extracted from these silos by suction and packed into bags by a packing machine The materials are tested at all stages so as to ensure a finished cement conforming to B.S.S. in every respect.

During the year 1937, a Structural Shop was also added to fabricate the Transmission Line Towers, to suit the designs of the Electrical Department. Very recently, the steel towers for the bridge across the River Sharavathi, near Jog, have been built and supplied.

Production of quality goods is maintained in the several departments with the help of a Chemical and Physical Laboratory.

The Works at present provide employment to about 7,000 people.

Encouraged by the success of the works, Government have recently sanctioned the purchase of Electric Furnaces for the manufacture of steel and Ferro-silicon and Ferro-chrome.

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MINERAL INVESTIGATIONS IN MYSORE DURING 1939-40

By B. RAMA RAO, M.A., D.I.C., F.G.S.

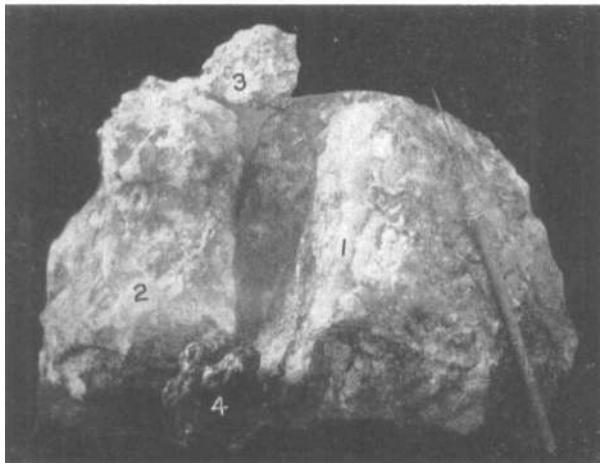
Director, Mysore Geological Department.

General Scope

MYSORE has been taking a prominent position in mineral production, contributing annually some 12 to 15 per cent of the total value of mineral output in India and it provides employment to more than 35,000 persons in the several Mining and Mineral industries. Investigations of the State Geological Department, during the past 45 years of its existence, have shown that deposits, of various grades, of many minerals which are used in the metallurgical, ceramic, chemical and other allied industries and also large deposits of those which could be used for purposes of construction are available in Mysore. Every year, deposits of a few of the selected minerals would be taken up for detailed investigations to ascertain their extent, quality and the special purposes to which each of such deposits would be found suitable; and as a result of such investigations of previous years it might be mentioned that the Mysore Iron and Steel Works, the Cement, the Porcelain and the Paint Factories, the Stoneware Pipes and Potteries, the Tile and Fire Brick Factories, and the Glass and Enamel Works are some of the important mineral industries which have been set up in the State. Many of these are State-owned or State-aided. For some of these concerns, directly under the management of Government, the Geological Department itself mines and supplies the required quality and quantity of raw materials. In addition to its detailed prospecting and also mining and supplying the minerals to some of the Government Industrial concerns, the Department conducts intensive investigation by several up-to-date methods, to explore and locate the available deposits concealed deep down below the surface. It also furnishes geological advice on problems relating to Engineering and Water Supply questions. The Department has well equipped Geological, Chemical and Metallurgical laboratories where special mineral investigations are undertaken. The following brief account of the activities of the Department in 1939-40 will give some idea of the way in which it contributes its quota to the general material advance of the State.

Prospecting and Exploration of Minerals

(1) *Alluvial Gold.*—Small particles of gold, disintegrated and set free from the rich patches and pockets of gold-bearing quartz reefs, are found sparsely distributed in the surface alluvial soil, covering some four square miles, in the villages of Kudurekonda and Palavanhalli, in Honnali Taluk. To ascertain if it would be possible to extract profitably this alluvial gold, the area was taken up for intensive investigation in June 1939 and the work done so far, washing thousands of cubic yards of soil, has disclosed that gold occurs in minute particles to the extent of about one grain per cubic yard of soil on an average. Coarser particles, up to about $\frac{1}{4}$ to $\frac{1}{2}$ tola in weight are occasionally found, and the area had also yielded, some 35 years back, a coarse nugget of gold, weighing about $4\frac{1}{2}$ ounces, —the biggest nugget so far discovered in the area— but such coarse particles or nuggets are very very rare. Owing to the scarcity of water in the neighbourhood of these gold-bearing alluvial patches and also due to the very sparse distribution of small particles of gold and that mostly in cultivated fields, it is rather difficult to take up the extraction of this alluvial gold as a large scale mineral industry. However, our investigations show that each year, immediately after the heavy monsoon rains, some of the rain-wash along the upper reaches of nulla courses draining into the Hirehalla, a tributary of the Tungabhadra river, may be washed with advantage. This could be undertaken, without any considerable outlay, and with reasonable expectation of some profit, as a small cottage industry to recover the gold available which otherwise would be conveyed away, as waste, by monsoon streams. During the present investigations



Gold Quartz recently found near Ganjiganhalli, Shimoga District. To the left of the needle and also the thin dark streak to the left of 1, above, represent the metallic gold particles. 4 is a Nugget of Gold obtained close to Devikoppa (near Ganjiganhalli), some 35 years back.

Washing the Alluvium for Gold. Photo shows the newly devised cradle in operation.

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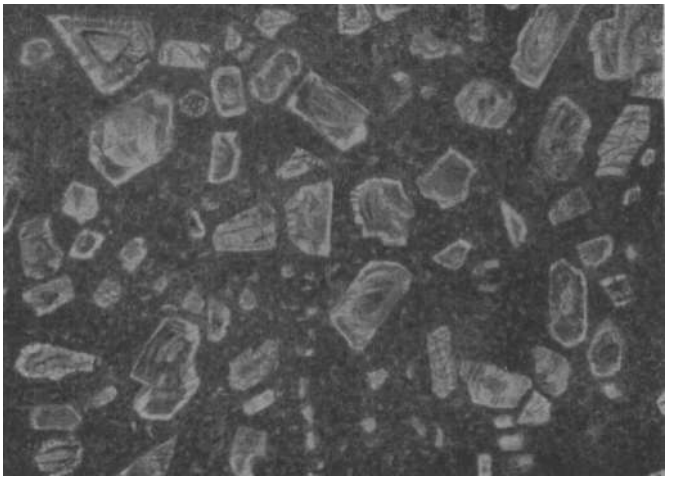
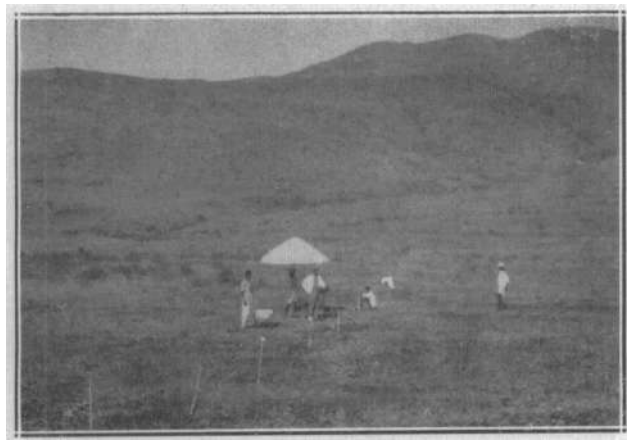
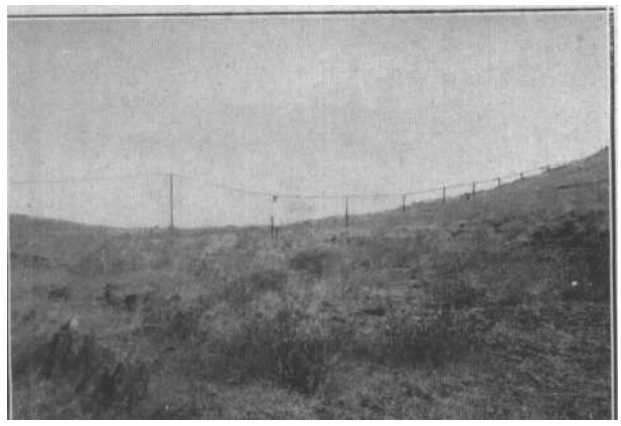
A collection of the Mysore Ornamental and Gem stones. Mysore possesses a great many varieties of porphyries, granites, marbles, green quartzites, etc., which are highly prized as ornamental stones. In the photo can be seen a collection of some of the specimens of paper weights, Ring-signets and other fancy articles cut and polished from Mysore rocks.



Photograph of a specimen of Porphyry rock of Mysore, which takes a good polish, and from which some of the fancy articles have been



Geophysical Survey near Guddadarangavvanahalli, Chitaldrug District. This Survey is being employed for location of hidden ore bodies. The photo shows a party in actual field work.



Geophysical Survey. Photo shows the temporary Electric current transmission line, in the above area, laid out for making measurements of the Electrical features of the ground.

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about 11 tolas of gold were so recovered by washing the soil from various spots at an approximate total cost of Rs. 400.

(2) *Gold Quartz.*—While these investigations were being conducted, recently, in the early part of June, near Ganjiganhalli, close to one of the spots where alluvial soil was being washed, a rolled boulder of quartz weighing about 9 lbs., containing some rich streaks and coarse particles of gold was found. It has been estimated that this boulder contains in the aggregate about 4½ seers (108 tolas) of gold valued a little over Rs. 4,500. This is the first and the largest of its kind so far found in Mysore and it has evidently come from one of the specially rich shoots of vein quartz in the locality. The area is known to contain several rich shoots of gold quartz, but the average distribution of gold in these reefs, as had been estimated by some private companies who had prospected the area, prior to 1914, by fairly extensive underground work, is stated to be only about 4 cwts. per ton. The area, however, needs a thorough and detailed investigation to ascertain if it could be developed into a paying mine and with this end in view the Department has made a close survey of the area mapping all the exposed quartz reefs. It expects to take up very shortly further investigations of the area by intensive underground exploration of some of the promising veins.

(3) *Chromite.*—This mineral which is useful for making stainless steel and ferro-chrome has so far been mined in the State, mainly for export. To ascertain if it could not be utilised locally to one or the other of the several purposes to which the mineral is used in other countries investigations are being conducted by the Department. Till recently the Department also had been mining and selling the ore from one of its largest and best deposits at Byrapur, and during the past 12 years it had mined and sold from this deposit alone about 50,000 tons of good ore, realising a total sum of about 12 lakhs of rupees. Deciding to conserve this ore for the future needs of the State, investigations by core drill prospecting were undertaken to ascertain its extent and this shows a further reserve of some 40,000—50,000 tons of high grade ore. Similar investigations are being extended to other deposits in that neighbourhood and during the year the exposures of ore deposits near Aladhalli to the northwestof Byrapur were tested. Theinvestigations disclosed that the deposits contain about 20,000 tons of low grade ore which, however, would need concentration before it could be utilised.

(4) *Kaolin.*—The demand for this mineral has grown very considerably during the past few years. It is used for the manufacture of porcelain, sanitary wares, electric insulators, and as a filling material for paints, paper and textiles. Kaolin is found in several parts of the State and it is being mined in different areas for manufacturing fire bricks, stoneware pipes, slate pencils, etc. Extensive suitable deposits of a very high grade kaolin which would serve the purposes of the Porcelain and Paper manufacture, have not been, however, as yet located. The Department has started an intensive exploration of the malnad areas which contain fairly extensive deposits of Kaolin, to locate such high grade deposits of the material, to make the Paper Industry in Mysore self-contained in respect of this important raw material. During the year from such intensive surveys and prospecting, near Narasimharajapur and Tirthahalli, we have been able to locate several deposits which in the aggregate are estimated to yield at least 100,000 tons of high grade kaolin. The mined material is being levigated in washing tanks, constructed at the mining spots in these different areas, to supply the washed material to the Mysore Paper Mills for their large scale trial. From the deposits located at present, the washed kaolin could be supplied to the Paper Mills to serve their requirements for at least 20 to 25 years.

(5) *Earth Salt.*—Large quantities of common salt are being used in several industrial concerns of the State. With a view to ascertain if the earth salt which is known to occur in the State, as efflorescent patches, would be of suitable quality and of sufficient extent to replace the imports, a preliminary survey of the salt bearing localities, in parts of Shimoga and Chitaldrug districts, was carried out.

Since the salt occurs, along with washing soda, purely as a seasonal product and as thin encrustations on the soil, no large quantities can be expected to be won in any one locality. But, an appreciable quantity may be obtained, however, from a number of isolated places and it has been ascertained that about 500 tons of salt can be annually collected in the area surveyed. Investigations are being continued to ascertain the quality of the material and the occurrence of such deposits in other areas of the State.

(6) *Limestone and Lime Kankar.*—Hydrated lime or slaked lime powder, which is obtained by burning and slaking high calcium limestone or lime kankar, is employed extensively in the manufacture of paper pulp, refining of sugar, glass making, in the tanneries for softening hides and also in the chemical industries. An exceptionally pure form of this substance is required for purposes of the sugar and paper manufacture and in order to see if any of the limestone or lime kankar available in the State could be utilised for this purpose, an examination of the deposits near Kondli and Voblapur in the Tumkur District, was made. This has disclosed several patches of high grade lime kankar capable of yielding at least some 200,000 tons of very good material. It is under investigation if the slaked lime from this lime kankar could successfully replace the hydrated lime now being imported by the Mysore Sugar and Paper Factories for their purposes. Should our investigations show that this slacked lime would serve the purpose, from the deposits now located the burnt lime could be supplied to these factoriesto serve their requirements for at least 40 to 50 years.

(7) *Kyanite and Sillimanite.*—Among the minerals used as refractories, sillimanite and kyanite have been gaining of late considerable importance and the utility of kyanite for this purpose is still in its early stages. Though both these minerals have been located in some of the Mysore rocks, the actual quantities available for commercial exploitation have not been ascertained. During this year, an intensive prospecting work for testing the extent of kyanite in the Holenarsipur area was started, late in the field season, and the work is still in progress.

Mining

As already stated the Department undertakes to mine and supply the raw materials required by the several Government Industrial concerns. During the year graphite, asbestos, chromite, kaolin of different grades, quartz and felspar formed the important minerals which were mined and supplied to the several concerns. The public interest in obtaining mineral concessions to mine and market the various minerals available in the State has been continuing as usual. There were 106 of such concessions during the year.

The War has hindered the mineral export and consequently there has been a lull in the export of minerals like chromite and manganese which used to be shipped to foreign countries. During the year there was an output of 30,000 tons of chromite, but due to the difficulty of arranging shipment many of the mines closed down towards the end of the year. The minerals used in local industries, such as China clay, quartz, felspar, magnesite, etc., have shown an improvement in output.

The renewal of leases of the Kolar Gold Mining Companies came into effect from March 1940 and will be in force for 30 years, and hereafter the full rate of the revised scale of royalties on the renewed leases becomes operative. An excess profit duty on gold has also been levied with effect from March 1940. The total revenue to Government from these sources is expected to amount to about 52 lakhs of rupees in the coming year.

Survey Operations

(1) *Geological Survey.*—Geological survey generally precedes the exploitation of the mineral deposits in any country. During the year about 300 square miles of forest-clad malnad zone in the Western Ghats were geologically surveyed, especially with a view to see if the area contained any important resources of economic minerals. This area, which had been preliminarily surveyed about 25 years back, had not been re-examined again. The survey now carried out has added considerably to our knowledge of the nature and origin of the rock formations therein. Iron ores, kaolin and ochres were the only minerals of some importance noticed in the area.

(2) *Geophysical Survey.*—There is usually a great difference in the physical properties such as density, magnetic susceptibility or electrical conductivity, between an ore body and the rock in which it occurs. By determining these physical properties on the ground with the aid of suitably devised instruments, it is often possible to detect the presence of an ore body even though hidden beneath the surface. The Department has now initiated a geophysical survey programme by employing some of the electrical methods with a view to locate, if possible, workable ore deposits in areas where the ordinary methods of prospecting have so far proved ineffective for the purpose.

During the year under report, about 150 acres of ground were surveyed near Guddadarangavvanahalli in the Chitaldrug District. This indicated the likelihood of occurrence of ore bodies in five different

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spots. Three of these spots were selected for verification by trenching and shafting. Two of the trenches showed a mineralised lode containing iron pyrites (altered) a few feet below surface and thus confirming the results indicated by the Geophysical survey. The third spot is being tested by underground work by the Company which holds a prospecting license in the area, and the results of this work are awaited with interest.

Geological, Metallurgical and Chemical Laboratories

These laboratories of the Department continued to be engaged with the examinations of rocks and minerals, experiments on ore dressing and concentration, and the chemical analyses and assays. Investigations in respect of the concentration of low grade graphite and the utilisation of the concentrated material for manufacturing lead pencils are being conducted.

Special Investigations

(1) *Sodium bi-chromate.*—On the results of investigations regarding the possibility of manufacturing sodium bi-chromate using the Mysore chrome ores and limestone, which had been conducted in the Chemical laboratory of this Department, a scheme for setting up that industry had been submitted to Government. After a careful consideration of this and other schemes bearing on the results of investigations conducted by the Indian Institute of Science, Government recently sanctioned a scheme for the manufacture of this chromium salt, of about 1½ tons per day, at Belgola where there is a plant for sulphuric acid. The Sodium bi-chromate is largely used in the tanning industry and there is an absolute shortage of this material now in India owing to War conditions.

(2) *Aluminium Sulphate.*—Last year the investigations of the bauxite deposits of the State disclosed that there is at least, 100,000 tons of highly siliceous bauxite at Sivaganga, very near to the railway. Some experiments conducted in the Chemical laboratory showed that this poor grade aluminium ore could be used for making aluminium sulphate which is largely used for purification of water for drinking purposes. The investigations so far conducted show that the scheme for manufacturing aluminium sulphate in the State could be taken up as an adjunct to other chemical industries at Belgola.

(3) *Potassium Permanganate.*—The low grade manganese ores of Mysore having failed to find a market, investigations have been taken on hand to ascertain if they could be utilised for making potassium permanganate. A research scholar employed by the Department, for the purpose, has been conducting investigations at the Government Industrial and Testing Laboratory. An electrolytic process of manufacturing this salt is being pursued and the results so far obtained seem to be encouraging.

Exhibits

A few of the selected minerals displayed in the mineral gallery of the Geological Stall give some idea of the minereral wealth of the State. Other exhibits show mineral products, descriptive flow sheets and charts depicting the mineral statistics and also of a number of models to illustrate the various processes and principles of applied Geology.

The exhibits are grouped as follows :—

A. *Mineral Resources* :—
   1. Metalliferous Minerals.
   2. Materials used in Industries :—
      (*a*) Abrasives.
      (*b*) Refractories.
      (*c*) Ceramics.
      (*d*) Chemical Products.
   3. Materials of Construction.
   4. Ornamental and Gem Stones.

B. *Geological History of Mysore* :—
   1. The Geological Clock.
   2. Relief Geological Map of Mysore.
   3. Geological Sections across the State.
   4. Typical Specimens of the Rock Formations of Mysore.

C. *Models illustrating* :—
   1. Kaolin Prospecting and Levigation.
   2. Alluvial Gold Washing.
   3. Open Cast Mining.
   4. Hauling in Underground Mines.
   5. Electrical Prospecting for Water.

MYSORE GOVERNMENT LIFE INSURANCE DEPARTMENT

Remarkable Success in a Pioneer Venture

THE economic and industrial history of the progressive State of Mysore presents a unique record of the solicitude of the Government of His Highness the Maharaja to institute and foster measures which contribute in any way to the welfare of His Highness' subjects. Not the least amongst such is the taking up of life insurance as a State enterprise, at a time when people had little faith in its capacity to fulfil its noble mission of providing against the direful contingencies of life. Recognising the inestimable benefits of life insurance and the fact that it is the one essential necessity of life that men do not provide for as they provide for other wants, but wait till its need is urged upon them, the Government introduced, as far back as 1891, a scheme of compulsory life insurance for the benefit, in the first instance, of officers in their service. The object of the scheme is to supplement the insured's income on his retirement and to provide a competence for his family in case of his early death. The fulfilment of this object is ensured by exempting the assurance amounts from attachments by civil courts. The general rate of monthly premium is ten per cent of the salary, subject to a maximum of Rs. 70 and it is recovered by deduction from the salary bills of the officers. The advantages of such a scheme of compulsory insurance are too obvious to require enumeration. Suffice it to say, that the inauguration of the scheme has earned for the Government the gratitude of thousands of families that would otherwise have been left destitute after the death of the breadwinner. Since its inception to end of the last official year 34,838 lives were assured under the scheme for the total assurance of Rs. 4,10,38,343. During the same period, there have been six actuarial valuations and each valuation has disclosed an increasing surplus. The latest valuation of the funds as at 30th June 1938 has admitted the grant of a compound Reversionary Bonus of 1·8 per cent per annum.

Public Branch

Just a quarter of a century after the establishment of the scheme of compulsory insurance for their employees, Government took another step forward by extending the benefits of the scheme to the general public of the State, thus earning for the State the distinction of being a pioneer in this direction also. The Public Branch of the Department, though open only to Mysoreans (by birth or domicile) has, within the short period of its existence, been able to achieve remarkable results and thus to secure a fairly high rank among the foremost Life Offices in India, both as regards the progress of business and its utility to the general public. Though a Department of Government, the Public Branch is, in its dealings with its constituents, conducted on up-to-date lines of a commercial concern. The assurance amounts are guaranteed by the State Revenues and, as the business of the Branch is managed with the utmost economy, it has been possible to afford the maximum assurance cover, consistent with security, at the minimum cost. Exceptional facilities are provided to policyholders regarding payments of premia, revivals and other matters. Claims are settled with the utmost promptness and without vexatious and expensive formalities. Service first and service last is ever the motto of the Department. The Public Branch possesses several unique features by virtue of which, it stands out pre-eminently as the ideal Life Office for Mysoreans.

It is gratifying to note that notwithstanding the generally adverse conditions prevailing in the country, the year ending 30th June 1940 continued to be quite a prosperous one for the Public Branch. During the year 6,904 policies were issued for an assurance of Rs. 58,61,900. The total business in force at the end of the year was 42,280 policies assuring Rs. 3,88,31,300. As a result of the actuarial valuation of the fund as at 30th June 1938, a simple Reversionary Bonus of Rs. 20 per thousand per

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annum was declared on all 'With Profit' policies in force on the date of valuation.

An electrically operated Addressing Machine was installed in the office during the year and the preliminary work in connection with its adoption to the business of the office is nearing completion. It is expected that with the help of this machine work can be more expeditiously and correctly done.

Government have also instituted an Income Policy Scheme as an adjunct of the Public Branch Insurance Scheme. The object of this scheme is to provide, in return for a capital consideration or in lieu of the assurance amount payable on a policy of either the Official or the Public Branch, the payment of annuities for a stipulated period to the investor himself or to any beneficiary nominated by him.

The offices of the Department are located in a grand building of its own, situated in the midst of the beautiful gardens of the Cubbon Park at Bangalore. The building is being extended to meet the growing needs of the Department.

Helpers have been appointed in all parts of the State to render all possible assistance to intending proposers, in the matter of effecting insurance on their lives.

The prospectus and other literature relating to the activities of the Department can be had at the Departmental stall in the Exhibition grounds or from the office in Bangalore.

GOVERNMENT PORCELAIN FACTORY

THE Ceramic Industry nowadays occupies a very important position among the other industries and Mysore has already given a lead in this direction.

The Government Porcelain Factory began its career in March 1932 and since then it has made rapid strides. All the raw materials like Kaolin, Felspar and Quartz are available in plenty round about Bangalore and a start was made by the manufacture of Electrical Porcelain which was supplied to the Mysore Government Electrical Department. All kinds of high and low tension insulators are being manufactured and it is under consideration to have a high voltage laboratory having the following equipment.

(1) One A. C. Sine-wave Equipment going up to one million volts ;

(2) One Impulse Testing Equipment going up to one million volts ; and

(3) One High-frequency equipment.—This will be the first high voltage laboratory of its kind in India where all problems connected with high voltage transmission will be carried out.

All the insulators manufactured at present in the factory are subjected to the following rigid tests at the factory :—

(1) Dry Flashover Test ;
(2) Wet Flashover Test ;
(3) Puncture Test ;
(4) Mechanical Test ;
(5) Temperature Cycle Test ;
(6) Porosity Test.

The only raw material which had to be imported into Mysore was coal and as the white coal of Electricity is available locally, construction work is going on an electrical tunnel kiln, the first of its kind in Asia. It consists of a long tunnel 283 feet long and the articles move in trucks inside the tunnel. The kiln is divided into three portions called the preheating zone, hot zone and cooling zone.

In addition to the manufacture of Electrical Porcelain, new sections are being opened for the manufacture of glazed wall-tiles, acid jars, porcelain textile accessories, containers for cosmetics, crockery, vases, etc.

Mysore possesses all the advantages for starting Ceramic Industry and in course of time Bangalore will become a big Ceramic Centre.

BADANVAL SPINNING CIRCLE

A brief account of Khadi activities during the year 1939-40

THIS is the thirteenth year since the hand-spinning and hand-weaving industry was revived in the State. During this year the production of yarn was restricted throughout, and the loom activity was kept up to carry over of the yarn at the end of the previous year. The production of yarn was 23,049 lbs. valued at Rs. 48,019 during the previous year. The number of spinners working for the Centre remained the same as that of the previous year. The production of Khadi was Rs. 55,675 in value as against Rs. 58,924 during the previous year. The value is less because of the short output of coloured and printed goods.

The total sales of Khadi and Woollen goods amounted to Rs. 75,322 during the year under report against Rs. 76,571 in the previous year. The War cut off the normal supply of dyestuffs used for printing and dyeing and this greatly amounted for fall in sales. The sales at depots, run by us, in Mysore and Bangalore, amounted to Rs. 10,096 and Rs. 14,909, respectively. Due to scarcity of dyestuffs, the production of fancy coloured goods was stopped. Some special varieties of coatings and shirtings were got from Tirupur to supplement our stock for sales. Woollen goods from A. I. S. A., Kashmir Branch, were obtained. The sales to Government Departments during the year amounted to Rs. 16,895, to spinners and weavers Rs. 10,205.

The Circle participated in the following Exhibitions during the year:—The Dasara Exhibition, the Madras Congress Exhibition, the Nellore Cattle Show and Exhibition and the Udupi Paryayam Exhibition. The total sales in all these Exhibitions amounted to Rs. 1,288.

The Wool Spinning Branch at Kolar showed a remarkable progress during the year. The sales amounted to Rs. 8,055 against Rs. 5,061 during the previous year. Carpets for filtering gold were the supplied to the Mining Companies. The production of Khadi in the Hossur Khadi Centre amounted to Rs. 4,128 in value and sales to Rs. 5,284 as against Rs. 4,702 and Rs. 5,980, respectively, during the previous year. As in Badanval, spinning activity was limited, loom activity being kept up out of the stock of yarn at the close of the last year. The production of yarn and Khadi in the Bageshpur Centre which is also a branch of Badanval Spinning Circle, was Rs. 772 and Rs. 378 as against Rs. 609 and Rs. 1,064, respectively, during the year 1938-39,

The Training Section, for imparting training to students in various village industries was continued during the year. The training of the second batch of 8 students was completed by February 1940 and a third batch of 6 students is under training.

Paper-making Units, one in Badanval and the other at Hossur are started. One more unit is to be started in Chellakere. The foreman in charge of Badanval Unit was sent to Hossur, to set up the papermaking unit. The paper production unit at Badanval greatly served for the training of students. The following figures represent the work done in the papermaking section at Badanval and Hossur.

	Badanval	*Hossur.*
	Rs.	Rs.
Value of paper produced ...	186	140
Sales	257	140
Total working expenses	833	98

Besides papermaking units, a Mat Weaving Section was also started. With the kind permission of the Palace authorities some stock of reeds was cut and transferred from the Narasambhudi Tank Bed. This helped to feed the looms of the section. The total value of mats woven during the period was Rs. 203. The products found ready sale. A ghani of the Maganvadi Type was also installed in Badanval for purposes of training and demonstration. During the year, 331 seers of oil was extracted and it was all consumed locally.

Hand-spinning and hand-weaving have taken root in the homes of the agriculturists of the State. There is scope for expansion of this industry depending mainly on the help and stimulus from the public and the actively sympathetic Government.

Statement showing Khadi activity in the State for 1939-40.

Name of the Centre.	*Value of Khadi production*	*Value of Khadi sold*	*No. of Spinners*	*No. of Weavers*	*No. of Villages included*
	Rs.	Rs.			
1. Badanval Spinning Circle including its Branches	55,675	67,267	4,000	176	163
2. Kolar Wool Spinning Centre (Woollen fabrics)	5,393	6,055	103	42	Kolar
3. Hossur Khadi Centre	4,128	5,275	800	60	20
4. Bageshpur Khadi Centre ...	378	1,000	145	13	10
Total of Departmental Khadi Centres...	65,574	81,597	5,048	291	194
5. Aimangal Khadi Centre ...	15,363	14,209	1,200	150	30
6. Ajjampur Khadi Centre ...	2,265	2,583	564	30	12
7. Tagadur Khadi Centre	9,003	8,473	1,258	40	30
Total of Non-Departmental Khadi Centres ...	26,631	25,265	3,022	220	72
Total for the State ...	92,205	1,06,862	8,070	511	266

Considering the entire State, Khadi work supported 8,070 spinners and 511 weavers in 266 villages. The total production was valued at Rs. 92,205 and sales amounted to Rs. 1,06,862. The number of villages are adopted from the entries in the Registers, whether they contain two spinners or two hundred.

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OF

STALL-HOLDERS IN THE DASARA EXHIBITION, 1940

A

	Block	Stall No.
Ayurvedasramam, 151, Govindappa Naik Street, Madras	B	16
All-India Ageney, Ltd., 20, St. Mark's Road, Bangalore	D	4
Amrutanjan, Ltd., 7, Thumboochetty Street, Madras	L	4
Ali, C. H., 15, City New Market, Bangalore	B	32, 33
Amco, Ltd., Mysore Road, Bangalore	E	9, 10
Ayurvedic and Unani College and Hospitals, Mysore	B	22
Agricultural Department, Director of Agriculture, Bangalore	Q	29, 38
Ahmed Azad, M., Ahmed-Anjan Depot, Bezwada	B	21
Achuthan, A., Krishnavilas Hotel, Salem	H	25
Arthanari Iyer, K. P., Chentraya Chetty Street, Rasipuram	K	8
Abdul Sattar Khan, Mysore	H	7
Andhra Swadeshi Stores, Makkaji Chowk, Mysore	D	5

B

Basappa, K. S., Gurubasava Cap Mart, Chikpet, Bangalore	C	28
Bangalore Stores, Chickpet, Bangalore	C	32, 33
Bank of Mysore, Ltd., Bangalore	Bank Room.	
Bangalore Cap Mart, Makkaji Street, Mysore	D	7
Bata Shoe Co., Ltd., Sayyaji Rao Road, Mysore	A	12, 13
Bee-keepers' Co-operative Society, Ltd., Saklespur	G	4
Bengal Electric Lamp Works, Ltd., G. A. Acharya, 288, Esplanade, Madras ...	Space for Advt.	
Brooke Bond, India, Ltd., Palmgrowe Road, Coimbatore	H	1, 2
Badanaval Spinning Circle, Badanaval	D	26

C

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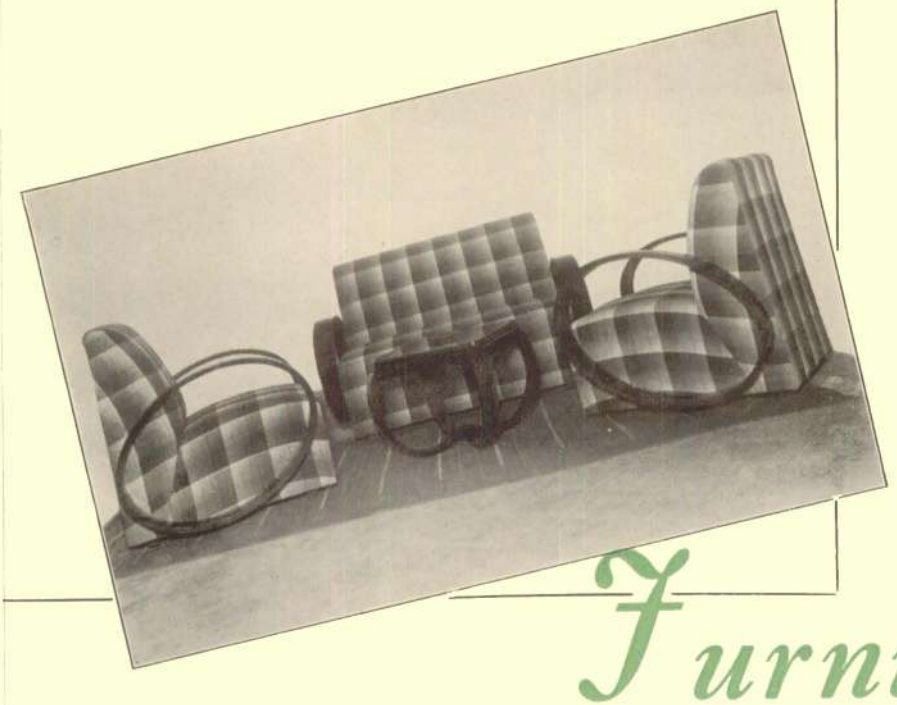

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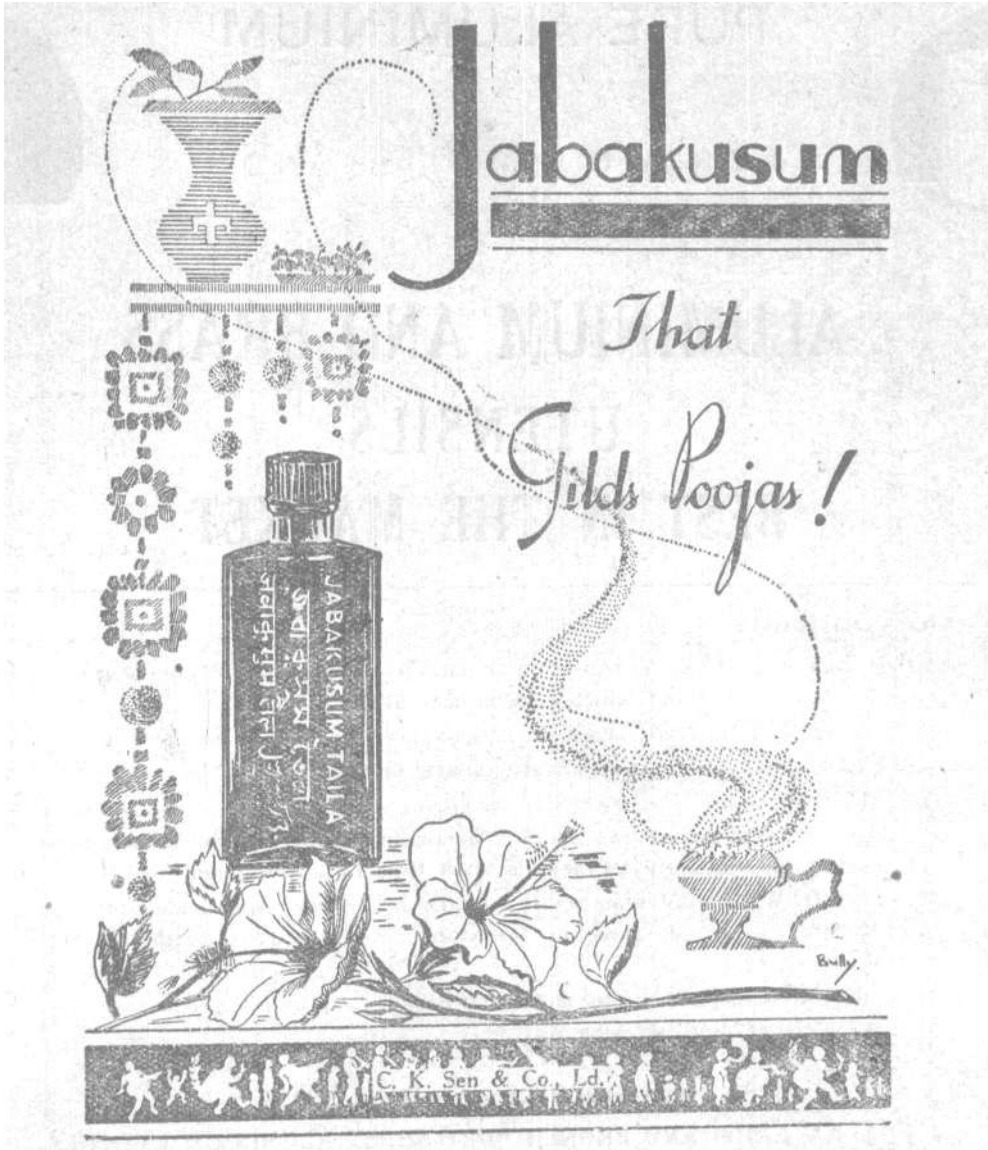

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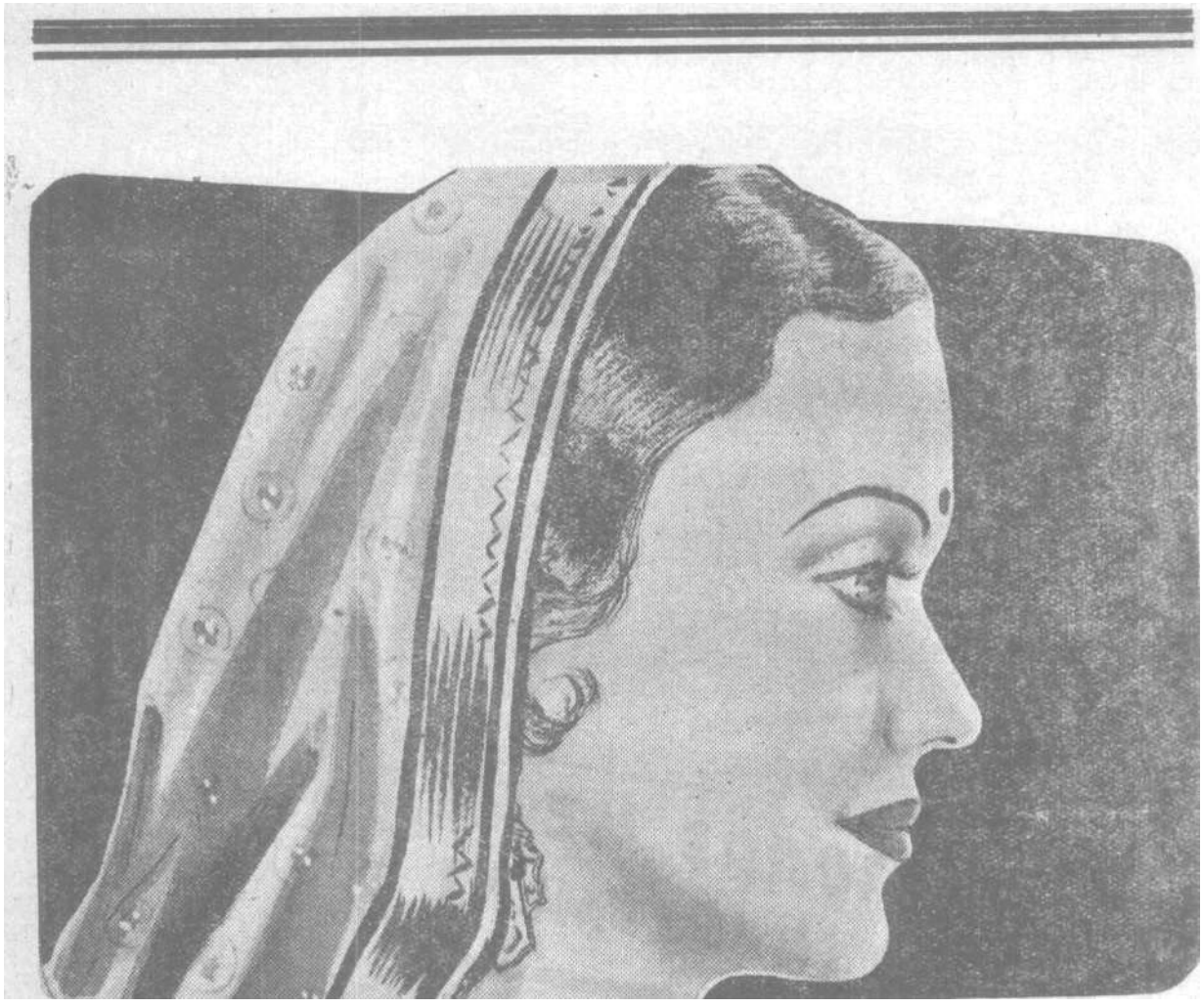

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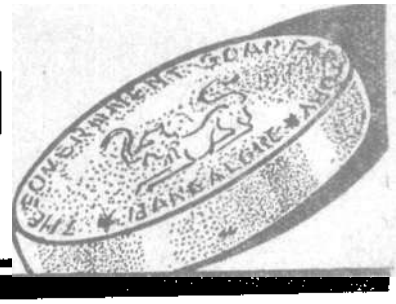

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	ರೂ. ಅ. ಪೈ
ಬಿಡಿ ಪತ್ರಿಕೆ	0-0-6
ಸ್ಥಳೀಯರಿಗೆ ಮತ್ತು ಏಜಂಟರ ಮೂಲಕ ಪಡೆಯುವವರಿಗೆ ವಾರ್ಷಿಕ ಚಂದ	1-8-0
ಪರಸ್ಥಳದವರಿಗೆ ಅಂಚೇ ವೆಚ್ಚ ಸೇರಿ ವಾರ್ಷಿಕ ಚಂದ	2-6-0

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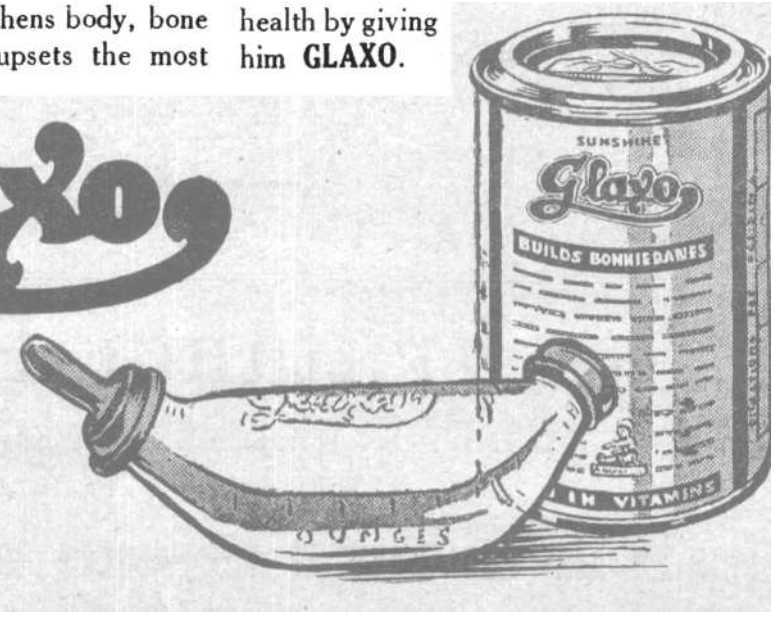

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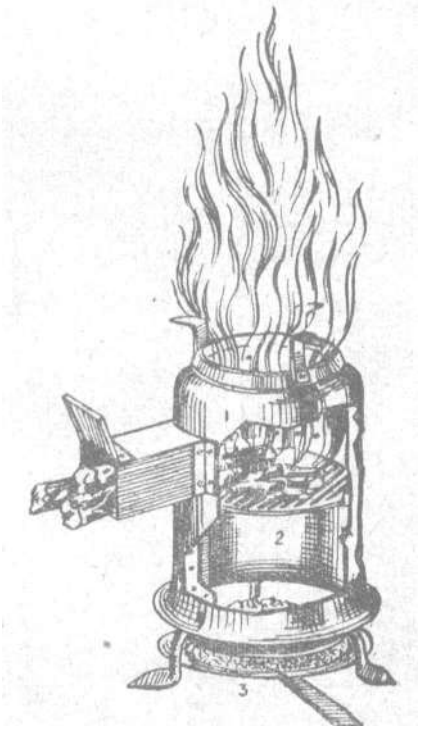

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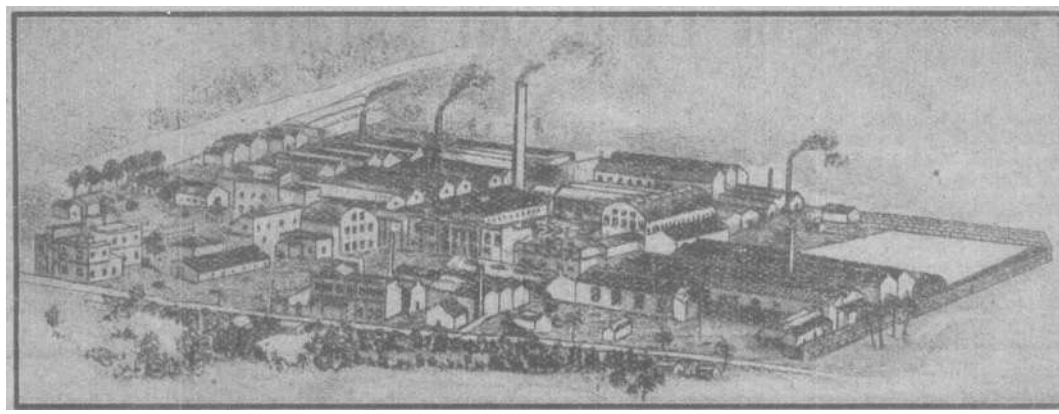

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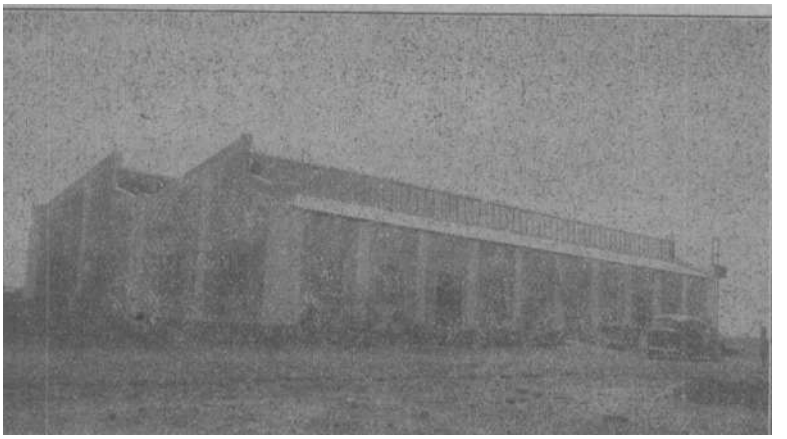

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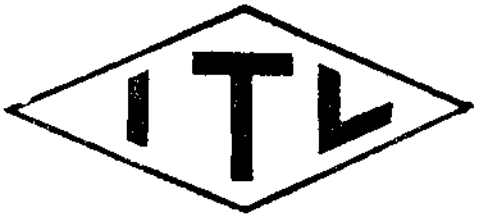
TRADE  MARK

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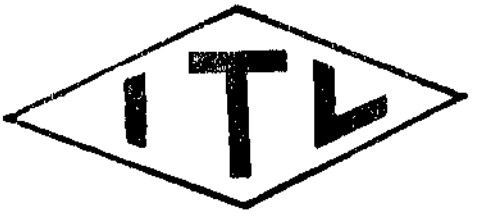
TRADE  MARK

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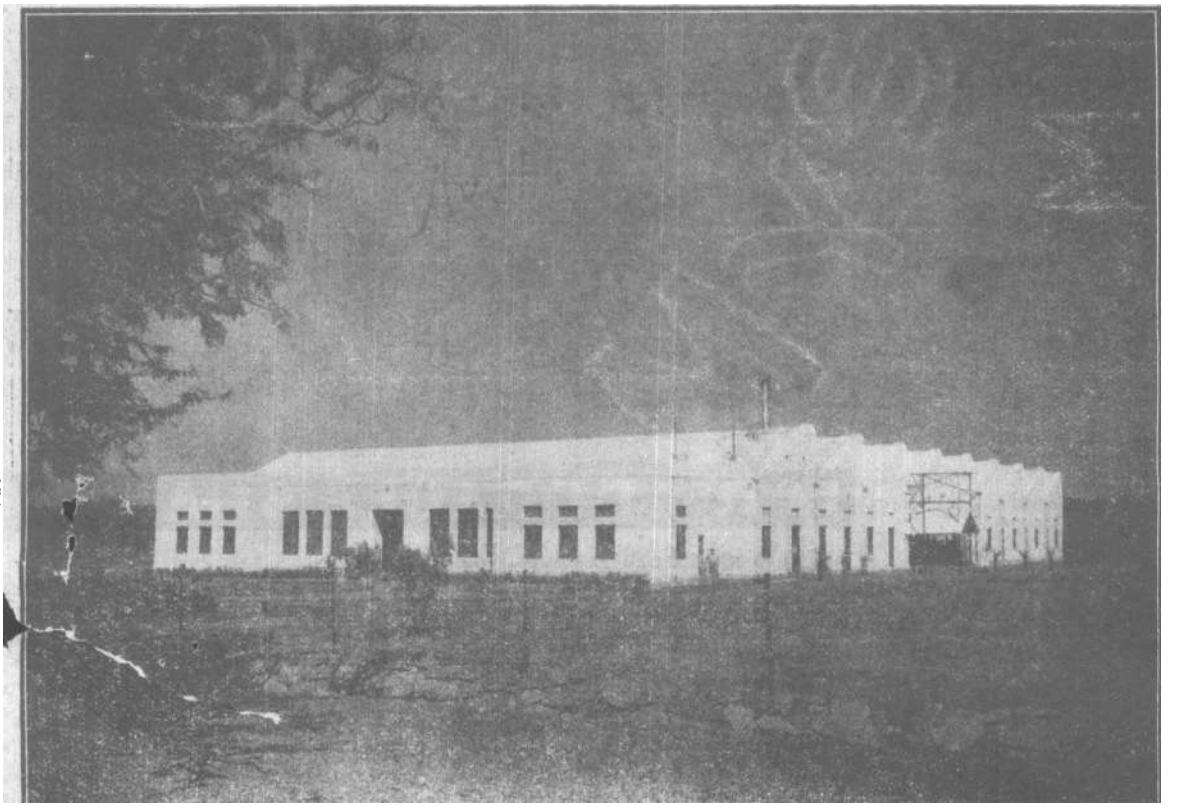
THE MYSORE SPUN SILK MILLS, LIMITED,
CHANNAPATNA



Manufacture

White, Tassar and Muga Spun Silk yarns in various Counts and Noil yarns in white and coloured blends

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For Samples and Quotations for SPUN SILK apply to—

THE MYSORE SILK COMPANY,
DODBALLAPUR (Mysore State)

AND

NOIL YARN & FABRICS made out of SPUN SILK & NOIL YARNS please apply to—

MESSRS. KENKARE BROTHERS,
DODBALLAPUR (Mysore State)